UNIVERSITY COLLEGE LONDON

ANNUAL REPORT 1983-1984

R8/164

CONTENTS

Foreword by The Provost 5
The Report for 1983-84 (with Supplement) 30
Publications by Members of College Departments:
Faculty of Arts 70
Faculty of Laws 93
Faculty of Science 96
Faculty of Engineering 130
Faculty of Environmental Studies 140
Faculty of Medical Sciences 142
Faculty of Clinical Sciences 157

Appendices:
I Numbers of Students 178
II University First Degree and Diploma Awards 179
III University Higher Degree and Higher Diploma Awards 182
IV College Diploma and Certificate Awards 188
V Scholarships, Studentships, and Prizes: College and University Awards 192
VI Benefactions, Donations, Research Grants and Contracts 198
VII College Accounts 214

OFFICERS OF THE COLLEGE

VISITOR
THE MASTER OF THE ROLLS

CHAIRMAN OF THE COUNCIL
SIR PETER MATTHEWS

VICE-CHAIRMAN OF THE COUNCIL
SIR COLIN CROWE
GCMG

TREASURER
H. M. PRIESTLEY
MA

PROVOST
SIR JAMES LIGHTHILL
DSC, FRAES, FIMA, FRS

VICE-PROVOSTS
PROFESSOR D. V. I. FAIRWEATHER
MB, CHB, MD, FRCOG

PROFESSOR J. W. MULLIN
PHD, DSC, FENG, FICHEME, CCHEM, FRSC

PROFESSOR J. E. C. T. WHITE
CBE, MA, PHD

SECRETARY
I. H. BAKER
CBE

FOREWORD BY THE PROVOST

PART I. COLLEGE DEVELOPMENTS

1. Continued enhancement of collaboration with industry.
2. Development of financial and academic strategies.
3. Academic developments financed by earmarked recurrent grant.
4. The Rectangle's new look.
5. Further development of the Joint School of Medicine.

PART II. CO-EDUCATION 105 YEARS ON

1. Numbers of men and women among the UCL students.
2. Numbers of men and women among their teachers.

* * * *

PART I. COLLEGE DEVELOPMENTS

1. *Continued enhancement of collaboration with industry*

On 20 June 1984 at the excellently attended Assembly of Faculties, held to mark the conclusion of UCL's very successful 1983-84 session, the College's special guest of honour was Lord Weinstock, the distinguished Managing Director of GEC. The occasion was an appropriate one for me to outline the College's long-established policy of academic/industrial collaboration and to mention some areas where that collaboration had recently been still further enhanced; after which it was a great pleasure to hear the very encouraging address by Lord Weinstock confirming the high importance which he and his company attach to such collaboration in research and development programmes and in educational activities with the universities in general and with UCL in particular. Our Chairman of Council, Sir Peter Matthews, added his own powerful endorsement of these policies.

For this Foreword to the Annual Report I am picking out three areas of the work of the Faculty of Engineering where I was able to draw the attention of the Assembly of Faculties to major developments in 1983-84 tending to strengthen still further some existing very close ties with important sectors of British industry. These three areas were Biochemical Engineering, Offshore Engineering and Electronic Engineering.

An impressive build-up of Biochemical Engineering at UCL during the nineteen-seventies took place under the leadership of Malcolm Lilly and

Peter Dunnill (later appointed, in 1979 and 1984 respectively, to Professorships of Biochemical Engineering within the Department of Chemical and Biochemical Engineering) and in very close co-operation with staff of the Department of Biochemistry including in particular Professor Patricia Clarke FRS. Their work influenced the conclusions of the important 1980 Working Party on Biotechnology chaired by the late Dr A. Spinks, which led to the establishment of a new national framework of policies for promoting initiatives in this field.

For the universities, an immediate result of the new policies was the selection of three institutions, including UCL, for support from 1981-82 onwards as major centres of expansion of biotechnological teaching and research through earmarked additions of £100,000 *per annum* to their 'baseline' recurrent grants. This allowed at UCL a substantial build-up of staff; primarily, beginning in October 1982, after most of the first year's grant had been used to convert the former Foster Court Refectory into a fine new Centre for Biochemical Engineering and Biotechnology in augmentation of those disciplines' existing accommodation. That existing space had itself been recently extended, in the main Engineering Building basement, to accommodate substantial new pilot plant acquired partly through the great generosity of collaborating industrial firms. This plant plays a vital role not only in research but also in teaching for the important MSc conversion courses in Biochemical Engineering and for the associated BSc(Eng) degree.

The next main opportunity for expansion came from a most fruitful sharing of resources, including space, between the UCL staff in Biochemical Engineering and two other groups of like-minded staff: in the adjacent Polytechnic of Central London's School of Biotechnology, headed by the geneticist Professor Geoffrey Holt, and in the Biological Laboratory of the University of Kent at Canterbury, headed by the microbial technologist Professor Alan Bull. The resulting consortium became increasingly active in co-operative research and postgraduate teaching and finally became incorporated as a registered charity under the name The Institute for Biotechnological Studies Ltd (IBS) in April 1983, with Professor Lilly and myself as two of its six directors.

The Department of Trade and Industry selected IBS as the first academic organisation to receive financial support from DTI for a biotechnological research programme. This industrially oriented programme involves seven industrial sponsors (Glaxo, Grand Metropolitan, ICI, May and Baker, Perkin Elmer, Shell and Unilever) who are contributing £100,000 each, with the DTI matching pound for pound so as to provide a total of £1,400,000 for this programme over the next five years. A principal

objective of this research programme is to extend biocatalysis beyond its established application through immobilised enzyme reactors (pioneered in the nineteen-seventies, especially at UCL) to systems using immobilised microbial biocatalysts for continued synthesis of valuable products. This large new tranche of external support complemented most valuably the existing support, obtained primarily from the Science and Engineering Research Council through its admirable Biotechnology Directorate headed by Dr G. Potter; whose listing of research grants in this field current in October 1983 totalled £4,619,003 for the UK as a whole, out of which the institutions forming IBS were receiving £1,074,325.

In the meantime The Institute of Biotechnological Studies, as its name implies, is developing valuable learned-society functions, including the organisation of scientific meetings and the election of Fellows of The Institute; while, in the educational sphere, the IBS International Postgraduate Diploma in Biotechnology has become a flourishing one-year course with strong support from UNESCO. This is an important contribution by IBS (one in which students receive teaching in each of the three component institutions) to the future development of enhanced Third World utilisation of the opportunities afforded by Biotechnology.

Offshore Engineering is another nationally and internationally important field where (as with Biotechnology) extensive UCL programmes of research and teaching had been built up over many years and were then greatly expanded with strong support from an SERC Directorate, from industry and from a government department (this time, Department of Energy) in close co-operation with other academic institutions. Indeed, after the entire educational programme for members of the Royal Corps of Naval Constructors had been transferred in 1967 from the Royal Naval College Greenwich to the UCL Faculty of Engineering, the College's postgraduate teaching in the whole marine field developed fast so as to comprise successful MSc courses in Naval Architecture, in Marine Engineering and in Ocean Engineering. The latter course, carefully matched to the needs of the offshore industry, was given by staff closely involved in research and development related to that industry's needs.

Then, by 1976-77, a powerful SRC Marine Technology Directorate headed by Mr A. M. Adye had taken action to set up 'major centres' of research, development and postgraduate teaching in the universities. Furthermore, the strong groups in the UCL Faculty of Engineering (Departments of Civil and Municipal Engineering and of Mechanical Engineering) had combined with equally strong groups at the Imperial College of Science and Technology to form the largest of all these 'major centres': the London Marine Technology Centre. Here at UCL, the

Government contributed through SRC to fund an important extension to our main Engineering Building to house some of the new research activities resulting from the Centre's formation.

From the outset, the collaboration between the valuably complementary groups at UCL and at ICST went excellently. The Centre Coordinator is ICST's distinguished Professor Peter Pratt and the manager of the Centre is our own Dr Stephen Montgomery (Senior Lecturer in Mechanical Engineering). By the academic year 1983-84, the direct SERC funding for the London Marine Technology Centre consisted of a grant of £3,464,000 spread over four years, of which UCL receives just over half.

In addition, the Centre had engaged in collaborative R and D projects with some forty industrial firms; many of these projects being concerned with vital aspects of the new technology required for moving offshore exploration and exploitation into deeper waters. Two of UCL's leading experts in this latter field have recently been appointed to personal professorships in the Mechanical Engineering Department (Bill Dover in the area of structural fatigue from October 1983 and Rodney Eatock Taylor in hydrodynamic loadings on offshore structures from October 1984). Much of the important work on foundation mechanics and on structural stability in the Department of Civil and Municipal Engineering is also going excellently, and will benefit from a major access of new space for that Department gained (without, as explained in section 4, any demands being made upon public money) as a result of the forthcoming completion of the UCL Quadrangle.

For the past five years Bill Dover, with the strong support of Dr Roy Collins in Mechanical Engineering and Professor Hugh Michael in Applied Mathematics has been developing a highly promising new technique (based on alternating-current field measurement) for the detection and size-determination of cracks within metal structures; where, indeed, crack detection and sizing have proved of vital importance for the avoidance of catastrophic failures. For offshore steel structures the major potential sources of failure are surface-breaking fatigue cracks. Present methods of underwater inspection for finding and sizing such cracks are unreliable and, after detailed discussions with industry and the Department of Energy, the London Centre won agreement for the setting-up of a major 'Underwater NDE Centre', which is establishing a national 'library' of the tubular specimens containing fatigue cracks to make possible comparative trials on different (newer and older) systems directed towords the Non-Destructive Evaluation of structures, for use at the present time by divers and then increasingly (as offshore work moves into deeper water) by remotely controlled devices. Rapid expansion into this new area was facilitated by an

agreement with the City University on a sharing of resources including space, and the large tank facility for testing the new devices is located at the City University. The offshore industry has already shown the strongest possible interest in the co-operative activities of this Underwater NDE Centre, by providing 75 per cent of the funds required to establish the new facilities and by making plans to use them intensively when they are available.

The *third* area of the work of the Faculty of Engineering where I was able to draw special attention at the 1984 Assembly of Faculties to some major recent enhancements of a long-established policy of very close collaboration with industry represented one of the principal fields of interest of Lord Weinstock's own company, GEC. Indeed, there is a very clear parallel between the extremely fruitful co-operation of Ambrose Fleming, UCL's first Pender Professor of Electrical Engineering, with Marconi and his far-reaching projects for wireless telegraphy using Fleming's newly-invented thermionic valves, and the collaboration of our modern highly innovative Department of Electronic and Electrical Engineering, led by our sixth Pender Professor, Eric Ash, with that great General Electric Company which incorporates the still very successful Marconi Company created through Marconi's brilliantly inventive genius.

It is, of course, not only with GEC that Professor Ash's Department collaborates. He retains very valuable links with STL, where he worked before coming to UCL in 1963, and the College is particularly grateful to that institution's parent company for its recent creation at UCL of the STC Senior Fellowship in Bioelectronics, held by the biosensor expert Dr Flanagan. British Telecom, too, has collaborated closely with the Department which has especially benefited from BT's generous sponsorship of the BT Chair in Optoelectronics occupied by Professor John Midwinter. Some eight other firms sponsored work in the Department during 1983-84. In addition, the Department benefits greatly from continued SERC support in very many forms, including a long-standing block grant to the Microwave Research Unit as well as some valuable support given jointly with DTI under their Joint Optoelectronics Research Programme. Many Government departments, again, are active in collaboration with Professor D. E. N. Davies's Systems Group in its important research work on optical-fibre systems, and on antennas, radars and signal processing.

Nevertheless, the Department maintains specially close links with GEC. It is a pleasure, furthermore, to note that these are links not only on research projects but also on aspects of the Department's teaching work, to which such valuable contributions are made by Visiting Professors; two of whom are Professor Derek Roberts, GEC's Technical Director, and Professor Daryll Hooper, the Director of the GEC Hirst Research Centre.

In the research field, the academic year 1983-84 was marked by the firm establishment of a big new R and D project sponsored jointly by GEC, UCL and SERC. This project involves the creation at UCL, in full co-operation with GEC's Hirst Research Centre, of a powerful group developing comprehensive techniques for the computer-aided design of very-large-scale integrated circuits; a group to be known as the Integrated Circuit Design Centre although it will be concerned *both* with the design *and* with the evaluation of the products. Great benefits in both research and teaching are expected from the presence within UCL of this important group with a high level of expertise in one of the key modern technologies. The College, furthermore, is most grateful to the GEC, and to Lord Weinstock in particular, for their willingness to consider helping to fund the provision of a major new access of space for R and D activities to contain the continued very healthy growth of our vigorous Department of Electronic and Electrical Engineering; while we again record our thanks, too, to Lord Weinstock for the inspiring address he gave to our Assembly of Faculties, including the clearest possible indication that GEC also greatly values all of its long established links with UCL; links which can indeed be regarded as a model for fruitful academic/industrial collaboration.

2. *Development of financial and academic strategies*

The questionnaire included within the circular letter sent out by the Chairman of the University Grants Committee on 1 November 1983 was, on the whole, welcomed at UCL. Above all this was because the task of responding to the questionnaire provided a valuable framework for bringing together many different aspects of the College's forward thinking, including academic planning for individual Departments and for wider units within the College alongside financial and administrative planning, into a coherent strategy document for the College as a whole that could be developed and polished until it represented a single agreed view of the Academic Board and the College Council. Such an outline account of the College's intentions and objectives could play a role analogous to the former quinquennial planning documents in giving UGC a full account of how the College was harmonising financial imperatives with academic achievement and potential. It could be important also in similarly informing the Court of the University of London.

It is noteworthy that a full UCL consensus on the answers to all 28 questions was reached. Although any group or individual within the College was free to send supplementary material to the UGC, none in fact chose to do so.

The College's fundamental plan for 1984-89 was included in the 50-page response to question 1 (the other 27 answers filled only 20 pages). It would be out of place in this brief foreword to attempt to summarise that extended response, but a general account of its structure may be indicated.

Detailed plans were given for ten specific areas of the College's work: (i) Engineering, (ii) Mathematical Sciences, (iii) Physical Sciences, (iv) Biological and Basic Medical Sciences, (v) Clinical Sciences, (vi) Modern and Medieval Languages, Literature, History and Archaeology, (vii) Ancient Languages, Literature, History and Archaeology, (viii) Fine Art, (ix) Legal, Economic, Environmental and Social Studies, (x) General Services for the College and its Students. Under each of the first nine headings, the plan enumerated the Departments included and also gave full listings of the First Degree Courses and Postgraduate Taught Courses on offer. These were followed by summary descriptions and forward looks for Major Research Activities, and by sections on Postgraduate Teaching Plans, Continuing Education (where applicable) and Undergraduate Teaching Plans. Under heading (x), accounts of the current work and future plan of the Library and Computer Centre, as well as of the Registrar's Division, Financial and General Administration, Maintenance of Premises, Health Centre, Careers Service, Student Accommodation and Student Union, were given.

All of these detailed plans were preceded by a careful account of the financial planning framework into which they 'needs must' be fitted. This was founded on a vitally necessary programme of staff reductions through (i) an attempt to achieve 160 early retirements during the three academic years 1981-84 (in fact, 154 were achieved) and (ii) a widespread freezing of vacancies occurring naturally; with only the most academically essential posts being filled. Even though, on the plus side, total numbers of high-fee students of good standard were (as a result of devoted efforts in Departments) approximately maintained,nevertheless the severe reduction in baseline recurrent UGC grant imposed on the College had required both such heavy reductions in posts financed from that grant and a 15 per cent reduction (in real terms) in the non-staff expenditure so financed. Also, looking ahead, it will be necessary to achieve very substantial further savings (in accordance with existing targets for different areas of the College) through reductions in staff posts.

The College's financial strategy, however, is one not merely of cost cutting but also of income augmentation. Financial support for work at UCL from non-UGC sources increased (as our Response to Question 1 noted) from £7.5M in 1979-80 to £12.9M in 1982-83; and the 1983-84 Accounts given in this volume show the corresponding figure (the sum of

Grants for Research, Donations and Contributions for Services Rendered) to be £14.7M. These are increases far beyond the rate of inflation, achieved in an extremely competitive market for the winning of external support for research work and for the provision of other academic services. They are an indication of the high esteem in which the work of the College's staff is held.

Balancing the severe reduction in staff and non-staff expenditure for baseline recurrent UGC grant, then, there has been a major increase in the contribution of both types of expenditure from non-UGC sources; together, as will be seen in section 3, with substantial new developments financed by specially earmarked UGC recurrent grant. Although this balance was able to be achieved only as a result of the most strenuous efforts by UCL staff, the College as a whole recognises how essential those efforts were if its effectiveness as an academic powerhouse was to be maintained.

The Court of the University of London decided during the academic year 1983-84 that it would hold a separate Dialogue with each College and School in the University. This Dialogue would be aimed at broadening the base of information available to the Court for its work of distributing within the University the UGC recurrent and capital grants and the associated equipment and furniture grants. The very first of these Dialogue meetings was that held on 21 May 1984 at UCL.

The UCL response to the UGC questionnaire proved a most suitable document to be used, alongside the College Accounts and Calendar, as the material circulated to Court members and officers in advance of this meeting as a basis for the discussion. It permitted a full presentation of financial policy and problems to be given against the background of academic plans in all the subject areas (i) to (ix) noted above and against the background of needs in the area of (x) General Services.

The occasion also allowed the College to record its appreciation of, and congratulations to, the Court in relation to three important recent developments. First of all, its admirable 1982 innovation known as 'the research factor arithmetic' had introduced a most valuable matching between methods of funding within the University and the essential nature of University institutions with their closely linked missions of higher education and research. The Court had been concerned to sustain the effectiveness of Departments making nationally important contributions to, in particular, scientific and engineering research; and, during the present initial phase, the innovation in question is applied only to Subject Groups within those fields (and, actually, with clinical medicine excluded).

The method, in brief, begins by considering a possible redistribution of the recurrent funds available within each such Subject group in accordance

with a simple formula. This formula would distribute three-quarters of the funds available in direct proportion to full-time equivalent student load, and just one-quarter of those funds in direction proportion to a measure of successful research activity. The measure used, for these science-based fields, is the average of external support for such research received over the past three years; which, in today's competitive conditions for the winning of research support, may within each Subject Group be a useful, albeit crude, measure of excellence. (Certainly, it appeals to the Research Councils; who explicitly expect universities to follow faithfully the dual-support system under which Research Council backing for a research project has to be matched by university backing with recurrent-grant and equipment-grant resources, creating the so-called 'well found laboratory' conditions in which the research project can flourish.) Finally, if the existing distribution of recurrent funding within the Subject Group differs from that derived by applying the formula, then a change in the distribution is made which goes, not all the way, but *part* of the way towards the formula-derived distribution. A somewhat similar method (but distributing 90 per cent in proportion to student load and 10 per cent in relation to research factor) is used for Equipment Grant; incidentally, the College's own internal methods of allocation among departments, for these Subject Groups, follow closely similar lines.

Besides welcoming the admirable way in which this innovation had been introduced and operated, the UCL representatives at the Dialogue were at pains to point out that it leads to a new and fully realistic definition of unit cost for each of the Subject Groups concerned. After the element of recurrent grant associated with research according to the formula has been subtracted (overall, this element adds up to just one-quarter of the total funds available), the remaining expenditure must be seen as associated with *teaching*. After division by student load, this must clearly give a true unit cost of teaching per student.

The overall unit cost for the (non-clinical) science-based disciplines, as so calculated from the data obtained by the Court Department for the preceding academic year 1982-83, was significantly lower at UCL than the average for the University of London as a whole. This difference demonstrated that UCL does indeed benefit in efficiency, within these Subject groups, from the expected 'advantages of scale'.

Actually, comparisons within the subject groups Arts and Social Studies had long established a similar advantage at UCL, whose unit costs were below the average for the University even without any allowance being made for research costs. At the Dialogue meeting, however, the College seized the opportunity to emphasise the appropriateness of seeking to

extend the useful research factor arithmetic to at least the Social Studies subject group, where costs special to research needs are rather substantial and where many of the other features which make that arithmetic appropriate are also present. Attempts are, furthermore, expected to be made soon in all academic areas to combine qualitative information on 'research plans' (along lines generally similar to those in the College's Response to Question 1) with the quantitative indications of research excellence used so far.

A second action by the Court to which the College responded appreciately during the Dialogue was concerned with target numbers of low-fee students. The Court's distribution of the overall target numbers for the University after completion of the policy of concentration of science and engineering upon five sites, one of which was the Bloomsbury site, had made a significant increase in UCL's science-based student-numbers target; raising it from the 1979-80 baseline figure of 1751 to a definitive 1984-85 target of 1944 students (since modified to 1964 students through the UGC allocation of two Information Technology posts referred to in section 3). This has enabled the College to accept into some outstanding courses in engineering disciplines, and in scientific fields where the industrial need for high-level graduates is keenly felt, substantially increased numbers of able students.

Thirdly, the College acknowledged with gratitude the Court's implementation of the policy aimed at a rationalisation of library holdings concerned with scientific subjects (outside clinical medicine) in the Bloomsbury area, as recommended by the Cowan Working Party. Specifically, the Court had agreed a capital sum of £60,000 to be spent on the DMS Watson Library of UCL to convert it into the main science and engineering library for all University users in the Bloomsbury area; and had agreed an addition of £60,000 *per annum* to baseline recurrent grant as a contribution to those additional costs which UCL would incur in maintaining that Library's holdings in these fields at an appropriate level, and in extending opening hours.

The College representatives outlined the timetable for effecting this modification during 1984-85. They explained how final recognition of the complete impossibility of achieving any new building development capable of housing the whole UCL Library had led to concentration on a 'sub-optional' goal: that of securing the best possible arrangement of 'science' holdings within an improved DMS Watson Library and of 'arts' holdings within an improved Main Building Library.

The Faculty of Arts would itself benefit in certain important ways from the latter concentration. In particular, it had been agreed with the Royal

Historical Society that a unification of the College's own History Library (at present housed separately in 25 Gordon Square) and the RHS Library (at present in the DMS Watson building) would be made on the second floor of the Main Building as soon as suitable space for members of the Departments of Latin and Greek and of related staff on that floor had been found elsewhere.

Several other matters concerned with space needs were discussed during the Court dialogue. The UCL representatives described how the urgently necessary policy, outlined earlier, of securing large increases of external support was itself limited, in (above all) engineering and scientific fields, by the availability of space; so that certain projects of importance for which recurrent finance was available had (unlike those described in section 1) been unable to proceed because the necessary space could not be found. In addition, Birkbeck College still needed new space for the offices of its Chemistry Department in close proximity to the recently completed Christopher Ingold Laboratories of the UCL Department of Chemistry so that the agreement between the two Colleges for shared use of those Laboratories, referred to in last year's Annual Report, could come into effect.

It is a pleasure to record that several important discussions during the Court dialogue led to most fruitful developments; for example, the discussion related to subject area (viii) Fine Art of certain special financial problems facing the Slade School, which understandably finds it difficult to secure any external funding, may have led to the much appreciated award (see section 3) of an additional recurrent grant earmarked for this purpose. Above all, the explanations of space needs contributed to bring about a most satisfactory subsequent development, with two excellent and well situated buildings of which the University owns the freehold becoming available to meet purposes outlined above. These are Gordon House (situated in Gordon Street next door to both the Christopher Ingold Laboratories and the Institute of Archaeology) and 66-72 Gower Street.

The University now plans to allow Gordon House to be used for (i) the UCL Departments of Latin and Greek (facilitating the Library developments just described), (ii) offices for the Birkbeck College Department of Chemistry (facilitating its sharing of the Christopher Ingold Laboratories with the UCL Department), and (iii) some additional storage space for the Institute of Archaeology. Also, it has been agreed to allow UCL to take over 66-72 Gower Street to meet certain rapidly growing needs in Engineering and in Clinical Sciences and to house the Library Bindery. These plans have been warmly welcomed by the Academic Board and College Council as allowing important developments to occur within the

general framework of those agreed academic and financial strategies that were formulated along the lines indicated in the present section.

3. *Academic developments financed by earmarked recurrent grant*

The UGC's 'New Blood' scheme has fulfilled a most valuable function (in the present straitened circumstances of universities) by offering positions on university staffs to highly qualified persons born during the nineteen-fifties. An earmarked addition to recurrent grant is used to fund each New Blood post; so that the acquisition of such a post may be described as financially neutral. In other words, an institution's general financial position is not influenced *either* favourably *or* unfavourably, because the extra grant just balances the extra cost of taking on the additional staff member. Academically, on the other hand, the winning of the post confers immense benefits from the opportunity to appoint an outstanding young Lecturer in an important area of study. Similar remarks apply to the analogous Information Technology (IT) scheme; for which, also, an addition of ten to an institution's target number of science-based low-fee students is made alongside the earmarked grant which funds each IT post.

Another important source of new posts funded by earmarked recurrent grants has in recent years been the Academic Initiatives scheme operated by the Court of the University of London. This has produced injections of excellent new staff in more than one age group; as, too, have those transfers of posts between Colleges that were agreed under the University's rationalisation scheme. Once again, all of these arrangements are 'financially neutral'; but, when carefully planned, can be academically of very great benefit.

The Court's meeting held in October 1983 was faced with an extremely large number of bids made during 1982-83 to support academic initiatives at Colleges and Schools; among which there were eight proposals from UCL, including one jointly with Birkbeck College and two jointly with The Middlesex Hospital Medical School. From the very small funds the available to it for this purpose, the Court could finance only a few of the proposals, but these inluded one from UCL: a Lectureship in the Department of Zoology and Comparative Anatomy concerned with the Molecular Genetics of the Immune System. At the same time, the University resolved to submit to UGC for possible additions of earmarked recurrent support all those proposals which the Court itself had been unable to fund. For UCL, this led to a further four proposals being supported in this way.

These included a Lectureship in the Department of Electronic and

Electrical Engineering concerned with Design of Integrated Circuits; a lectureship appointment aimed at maximising all the benefits to teaching from that Department's industrially oriented R and D initiative described in section 1. In the Department of Anatomy and Embryology the distinguished group in Mineralised Tissue Biology under Professor Alan Boyde was further strengthened with a new Lectureship. The Bartlett School of Architecture received a Senior Lectureship, enabling it to set up a new MSc course on Building Design for Developing Countries. Finally, the Joint School of Medicine received rather substantial support allowing it to set up a new Joint Department of Primary Health Care headed at professorial level. All of the special earmarked recurrent grant given by UGC to those areas is most keenly appreciated.

The 1983-84 bids by UCL under the Court's Academic Initiatives scheme also received, this time entirely from the University of London, some most valuable support. The strong case made by the Slade School for earmarked recurrent funding of £21,000 a year, in recognition of all those special difficulties which had been described at the Court Dialogue meeting in May 1984, and with the specific object of reinforcing its teaching of painting and sculpture, was fully accepted. The new régime in Bloomsbury Earth Science, described in my Foreword to the 1982-83 Annual Report, was further strengthened by a new Lectureship in the UCL Department of Geology concerned with Engineering Geophysics. Finally, in the Department of Mechanical Engineering, a Lectureship concerned with Non-Destructive Evaluation was created; once more, in order to maximise the benefits to teaching from one of the industrially oriented R and D initiatives described in section 1.

Alongside all of this, the College during 1983-84 received the same numbers of New Blood posts (10) and of IT posts (2) as in 1982-83. At the same time, UCL and Birkbeck College jointly received one further New Blood post which, again, helps to strengthen Bloomsbury Earth Science; namely, a Lectureship to be held jointly in the two Colleges' Departments of Geography and concerned with Automated Cartography and Remote Sensing.

This last award, incidentally, was hailed as a very welcome piece of support for the UCL Faculty of Arts; which, in addition, benefited from 3 out of the 10 New Blood appointments made to UCL 'on its own' in 1983-84 (by contrast to just 1 in 1982-83). The Lectureship in Italian Linguistics contributed to strengthen further the important new centre of Italian studies created by the University's rationalisation scheme described in my Foreword last year. The Lectureship in History of Dutch Art similarly gave further strengthening to the powerful centre for Dutch studies created at

UCL under the University's rationalisation programme. Finally, the Department of Political Economy jointly with the Faculty of Laws gained a most welcome Lectureship in Law and Economics, concerned with matters such as the cost-benefit analysis of legal procedures.

In the faculty of Engineering, a New Blood post in Photogrammetry was awarded to the Department of Photogrammetry and Surveying, which the College had deliberately strengthened in 1982 by filling its vacant Chair of Photogrammetry (to which Professor Harley was appointed). Also, one of the new IT posts was won by the Department of Electronic and Electrical Engineering to allow a further reinforcement of its work on Integrated Circuit Design through appointment of a Lecturer to be concerned with Adaptive Systems for Reliable Very-Large-Scale Integrated Circuits.

The other IT post went to the important group concerned with very fast Image Processing techniques led by Dr Michael Duff in the Department of Physics and Astronomy. That Department was also delighted to win a New Blood Lectureship to develop further its highly successful research work in Ultraviolet Astronomy.

Elsewhere in the Faculty of Science, a New Blood post was awarded to the Department of Botany and Microbiology to reinforce the pioneering activities of Professor Michael Evans on Plant Biophysics particularly in relation to photosynthesis. Again, the College's unique Micropalaeontology MSc course was strengthened through the award of a New Blood Lectureship concerned with Palynology and Palynofacies.

While this award followed up still further the earlier University rationalisation of Earth Sciences in Bloomsbury, a similar rationalisation within Mathematics was finalised during 1983-84. This has brought to UCL from Bedford College a very distinguished team of algebraists specialising in ring theory: Professor P. M. Cohn, FRS, Dr W. Stephenson and Dr W. J. Dicks. They complement most beneficially the College's strengths in other areas of Pure Mathematics.

Lastly, there were 3 New Blood appointments in the UCL School of Medicine. One of these was a Lectureship in Biochemistry concerned with Enzyme Biotechnology, a field in which the Department of Biochemistry under Professor Bob Rabin continues to be very strong and to contribute massively to biotechnological programmes including those mentioned in section 1. Another was a Lectureship in Genetics dedicated to Human Genetics, an area where Professor Elizabeth Robson and her staff in the Galton Laboratory are consistently productive of important discoveries. The third was a Lectureship in the Department of Experimental Pathology (led by Professor Jack Judah) concerned with the study of Transport and Chemical Processing of Viral Proteins within Cells.

The UCL School of Medicine also noted with great pleasure the two New Blood awards made to its closely associated partner The Middlesex Hospital Medical School, in the Departments of Biochemistry and of Genito-Urinary Medicine. For details of further development of the Joint School of Medicine, see section 5.

4. *The Rectangle's new look*

A miracle of compression has been achieved in the tight packing resulting from a century and a half of vigorous growth in the numbers and sizes of academic departments and services contained within the 'Rectangle' of UCL; that is, within the 'block' (in the American sense) bounded by Gower Place to the North, Gordon Street to the East, Torrington Place to the South and Gower Street to the West. The College in 1984, to be sure, includes some very major activities off the Rectangle. Fortunately, these (except for certain specialised Physics and Astronomy facilities) are in very closely neighbouring buildings; to the North, Wolfson House (for Genetics and Experimental Phonetics); to the East, Bentham House (for Laws), Wates House (for Architecture and Planning), 4 Taviton Street (for Political Economy) and the Christopher Ingold Laboratories (for Chemistry); to the South, 26 Bedford Way (for Geography and Psychology); to the West, the buildings of the Faculty of Clinical Sciences. At the same time, well over half of the College's total activity continues to be concentrated within the Rectangle itself.

The Rectangle underwent a major transformation during the academic year 1983-84 and the immediately ensuing months; so that, by the time this Annual report is printed, the appearance of three out of its four sides will have acquired a greatly improved, and indeed a most pleasing, appearance. To the South, this has resulted from devoted and determined efforts by the Faculty of Engineering during 1983-84 to refurbish its main Engineering Building entrance from Torrington Place; while various endeavours on a necessarily far more extensive scale produced the massive improvements to the North and West.

Undoubtedly a 1985 visitor to the North side of the Rectangle (Gower Place) will be struck first of all by the shining creamy whiteness of the Kathleen Lonsdale Building's cleaned stonework, rivalling in its appearance the results of the stone cleaning in the Quadrangle and along the College's Gower Street frontage initiated five years earlier. Then a closer look at that Building's top two floors will show how the third floor has been completely renovated, while the original fourth floor, a late addition to the Building extending over only half its width and hardly visible from the road, has

been replaced by the handsome new full-width fourth floor to the design of John Stillman.

The same visitor, after turning the corner into Gower Street, will at once catch sight of the southernmost of the two bright 'pavilions', designed by Sir Hugh Casson, an Honorary Fellow of the College, with their stonework's brilliant shapely detail. Then a walk down the road will show how, to someone viewing from the street, those two splendid terminations of the North Wing and South Wing Extensions make a perfect frame for the Portico and the Dome, as well as for a College Quadrangle by then cleared of its postwar temporary huts, though still boasting the two historic Lodges.

The story of how all this has been achieved, together with the earlier completion of the Christopher Ingold Laboratories (by adding a top floor again admirably designed by John Stillman), without a penny of the taxpayers' money being used, is a fine illustration of the combined academic and financial benefits of co-operation with industry referred to in section 1. The scientifically outstanding industrial research laboratory known as Sandoz Institute of London, established by Sandoz Limited under the direction of Professor Humprehy Rang FRS, will occupy the top two floors of the Kathleen Lonsdale Building, and we are confident that the presence within the College of SIL's distinguished research pharmacologists, medicinal chemists and neurobiologists will interact in a most beneficial way with the work of UCL in those fields through co-operation in teaching as well as in research projects. In the meantime the College's staff in Synthetic Chemistry, who were formerly spread out over the top two floors (then totalling 1600 m^2) of the Kathleen Lonsdale Building, have been rehoused in the completed Christopher Ingold Laboratories which include a fine new top floor (covering 800 m^2) purpose-built for Synthetic Chemistry research. Furthermore, not only was the cost of that completion entirely covered by the premium paid by Sandoz Limited for a thirty-year lease of the two top floors of the Kathleen Lonsdale Building, but also there was enough left over from the premium to provide at least another 800 m^2 of high-quality new space for academic purposes elsewhere in the College. Thus, the agreement with Sandoz Limited called for absolutely no diminution in the total space available for teaching and research at UCL; on the contrary, some 1600 m^2 of new space to a good standard would replace the former 1600 m^2 of old space in extremely poor condition (on which, indeed, Sandoz Limited was later to spend many millions to bring it up to the high standard needed by SIL).

Actually, it was recognised that the marvellous design for the completion of the Quadrangle produced by Sir Hugh Casson as the centrepiece of the

College's 150th Anniversary Appeal was in many respects the ideal way in which to use the residual funds available from the Sandoz premium; and that the cost of carrying out this project, providing 1300 m^2 of space for academic departments (primarily, Computer Science and Civil and Municipal Engineering), could be met if the premium were supplemented by Appeal contributions of the order of a million pounds. Devoted efforts by all concerned with the Appeal, described elsewhere in this Report, led during four academic years 1980-84 of active appeal work to the announcement at the Appeal Committee's final meeting on 25 September 1984 that the funds raised had just reached the level needed for the cost of the Quadrangle completion to be met in full. The College is eternally grateful to all members of the Appeal Committee and its Chairman Lord Goodman, to the Appeal Director Professor Derrick James and his admirable staff, and to all the immensely generous donors, who contributed to bringing about this highly satisfactory result; even though our satisfaction must remain mingled with regret that out of the various Appeal projects two extremely important ones had in the end to be recognised as impossible of achievement (including the long needed new building for the UCL Union, which suffers from such serious space constraints).

In the meantime, a long construction period during which the College has stoically borne the inconveniences of being unable to use its Quadrangle will be happily brought to an end early in 1985. Then all members of the College will be in a position to enjoy both the beauties of the completed Quadrangle and all the other benefits of the Rectangle's new look.

5. *Further development of the Joint School of Medicine*

The academic year 1983-84 proved to be a most successful first year of operation for the new Common Clinical Curriculum of the Joint School. every first-year clinical student was part of a 'firm' including both Middlesex and UCL students (along with, in many firms, an Oxbridge student); and, during the year, every firm spent equal amounts of time at The Middlesex Hospital, at University College Hospital and at the Whittington Hospital in Highgate. The students expressed themselves as highly satisfied with the new arrangements.

In addition, 1983-84 was the academic year when the governing bodies of UCL, of The Middlesex Hospital Medical School, and of our three associated postgraduate Institutes (of Laryngology and Otology, of Orthopaedics, and of Urology) voted unanimously to agree the recommendations of the Single School Working Party. Under these recommendations

the Joint School will become a new, fully unified, single School of Medicine, within University College London, from 1 August 1987. To ensure the smooth implementation of all the recommendations, the Joint School Co-ordinating Committee set up a Unification Sub-Committee which has since been extremely active with the assistance of eleven Working Parties.

In the meantime, some very promising new Joint Departments were set up in the Joint School under new professorial Heads who came into the Joint School from outside. These included Geriatric Medicine (where Professor Hodkinson was appointed to the Barlow Chair of Geriatric Medicine), Community Medicine (where the Chair was filled by Professor Michael Marmot) and Psychiatry (where the Chair was filled by Professor Rachel Rosser). It is a matter for satisfaction that the Joint School has created strong Joint Departments, headed at professorial level, in all of those disciplines which are described within the National Health Services as 'priority care groups'.

Within certain other disciplines there is serious anxiety about whether the Joint School's exceptional potential for excellence right across the board in undergraduate teaching, postgraduate teaching and research can continue to be properly matched by the level of clinical facilities available through National Health Service provisions which, in Inner London, are being severely cut down. With all these problems in mind, an important new piece of machinery, the Joint School/Health Authorities Liaison Committee, has been created to allow the fullest possible discussion of them by Joint School representatives and by the two District Health Authorities concerned (Bloomsbury and Islington). In this balancing of academic needs and service needs there are still many very real difficulties to be resolved. Yet in spite of all of those the entire Joint School continues to look forward keenly and confidently to the promise of its great future as the new Single School of Medicine.

1. *Numbers of men and women among the UCL students*

In Britain, the co-education of men and women in one and the same university institution dates back to 1878: the year when University College London, which had pioneered so many other reforms since it first admitted students in 1828, became (in all disciplines except, at first, Medicine) equally open to students of both sexes. Because seven years of meticulous preparation had preceded this historic new development (see The Admission of Women to UCL: A Centenary Lecture by Negley Harte; published by the College) it was successful from the outset; the proportion of women students reached over 25 per cent (out of a total of 1100) immediately and then gradually increased to over 40 per cent (that is, to 900 out of a doubled total of 2200) by 1914. Thus, although segregated women's colleges had done outstanding work in creating university opportunities for women, UCL's innovation demonstrated the big unsatisfied demand for co-education. The subsequent rather slow build-up of co-education elsewhere in the country did not significantly change the proportion of women among UCL's students, which fluctuated around the general level of 40 per cent and at present stands at 45 per cent of full-time students (2800 out of 6200).

Even today, however, there is a statistically significant variation in the percentage of women among different groups of UCL students. To illustrate this through figures for individual departments could be misleading because the number of students based in each department is often too small for statistically significant conclusions to be drawn from even very sizeable variations in the percentage of women. To avoid that possibility I have in the table on page 29 grouped together courses of broadly similar character to form twelve groups of courses; each group being composed of courses roughly comparable both in their academic character and in the mix of men and women attending them.

Two groups of students at the tope of the table include significantly more women than men. As conventional wisdom would suggest, one of these groups is concerned with the modern languages and literatures and associated studies. It is of interest, however, that another important group of UCL students is also in this 'top' *category* of groups (that is, groups with significantly more women than men); these are the students pursuing courses involving a mix of the social sciences and the natural sciences, as in Anthropology, Geography, Phonetics and Linguistics or Psychology. The two groups form Category 1 including about 25 per cent of UCL students.

Next, five fairly diverse groups of UCL students form a second category where the proportions of men and women do not differ significantly from the broad equality characteristic of the population at large. They include students pursuing a wide varietyof arts courses, of medical and biological courses, and of courses in the laws. These five well-balanced groups form Category 2 including about 40 per cent of UCL students.

Lastly, it is within the five groups at the bottom of the table that the numbers of men students significantly exceed the numbers of women. These include the students of architecture and planning, of economics, of the mathematical and physical sciences, and of engineering. These five groups of courses form Category 3 including about 35 per cent of UCL students; broadly, they are the courses which are widely regarded as being of a highly quantitative character.

The year 1984 was WISE year, so named in order to mark a consciousness of how wise it would be for Britain to seek to attract more Women Into Science and Engineering. It is recognised that a principal contribution to achieving this important objective needs to be made by teachers of mathematics and the physical sciences in Britain's schools; yet the universities, too, have a role to play and at UCL in particular there is a consensus strongly in favour of seeking to increase substantially the percentages of women among our students of the mathematical and physical sciences and of engineering. In all the College's programme of maintaining and utilising close contacts with the schools, active efforts to communicate this message are being made.

2. *Numbers of men and women among their teachers*

Against the above background it is of interest to consider trends in the proportions of men to women on the academic staff of UCL. After all, the expression 'co-education' might very appropriately be taken to apply to the teachers as well as to the taught . . . . It is, perhaps, remarkable that for twenty years after the College embraced co-education not a single woman was appointed to the academic staff. Three factors may have combined to bring this about: (i) preferential opportunities for the very small number of women then qualified for academic posts were being offered in the segregated women's colleges; (ii) by modern standards UCL offered extremely few opportunities on the lower rungs of the academic ladder (in 1898 the ratio of professorial to non-professorial posts was 3:2); and (iii) traditional male prejudices presumably influenced those making appointments.

Of these three hypothetical factors the probable importance of the last

two is indicated by the fact that out of the first dozen appointments of women to UCL's academic staff, constituting the only such appointments made for a further period of sixteen years (1898-1914), six were made in a single Department; where an energetic Head succeeded, partly with the help of the Quain bequest, in building up the numbers of non-professorial staff while, in addition, showing no inhibitions against the appointment of well-qualified women. The Quain bequest had allowed a transformation of the hitherto part-time Chair of Botany into a full-time Quain Professorship, held by F. W. Oliver with the assistance of a full-time Quain Student (essentially, a lecturer in modern terms). In 1899 a vacancy in the Quain Studentship was filled by the appointment of Edith Chick, who in 1903 was succeeded by Agnes Robertson. By 1905, new non-professorial posts in Botany had been created and Ethel Thomas was appointed to one of those. The 1912 choice for the Quain Studentship was Sarah Baker; and then, in 1913, new Lectureships in Taxonomy and Palaeobotany were created, the appointees being Winifred Smith and the most famous of all the early women members of the UCL staff: the great Marie Stopes who after making many important discoveries concerning the coal measures was to become such a fearlessly effective propagandist for birth control.

In the meantime another vigorous UCL pioneer, Karl Pearson, had been similarly active in bringing about at least four appointments of women to the staff in Applied Mathematics/Statistics/Eugenics, from Alice Lee in 1906 to Ethel Elderton in 1911. In Chemistry, Sir William Ramsay appointed Katharine Burke as an Assistant in 1906.

Then, during and after the War, it was the turn of the Arts and, in the first place, of History; where one of A. F. Pollard's early steps in his energetic programme of building up History at UCL was to create for Eliza Jeffries Davis a position which was to be converted later (in 1921, with financial support from the LCC) into a Readership in the History of London. Another famous and determined UCL pioneer was Daniel Jones who in 1920 created a Lectureship in Phonetics for Lilian Armstrong and in the following three years increased the strength of his Department by a further five posts, three of them being filled by women. In the meantime the importance of Margaret Murray's research work since 1899 with Sir Flinders Petrie was marked in 1921 by her appointment to a Senior Lectureship in Egyptology, and she continued long afterwards to make major cotnributions to archaeological and historical studies within the College.

Another Department which had benefited massively from the Quain bequest was English Language and Literature, where, under the enlightened Headship of W. P. Ker (who as early as 1909 had awarded an Assistantship

to Rachel Reid), the seventh person in the distinguished line of Quain Students to be appointed was Edith Batho. She, too, was to make long and valued contributions in her field at UCL, marked in 1933 by her election (like that of Rachel Reid before her) to the fellowship of the College. The Fellows' Dinner during 1983-84 greeted Edith Batho with a warmly enthusiastic toast drunk to mark the jubilee of that election.

Now there followed a general increase in the numbers of women on the academic staff, with appointments in Geology (1921), in Zoology (1922), in Mathematics (1923) and in French (1924) accompanying another appointment in English (that of Elsie Blackman, in 1923, to a Senior Lectureship). Yet while the numbers of women on the non-professorial staff continued to grow rapidly, there still seemed to be a powerful inhibition against the appointment of women professors at UCL. The first such appointment was that of the great crystallographer Kathleen Lonsdale to a Professorship of Chemistry and Headship of the Department of Crystallography, an appointment made, however, only in 1949 four years after she and Marjory Stephenson had become the first two women fellows of the Royal Society; and it was not until 1960 that a second woman Professor was appointed: Professor Elizabeth Wilkinson in the Department of German. By 1970 the number of women Professors was 5 and did not thereafter fall below 4; but, equally, it did not rise above 5. In the academic year 1983-84 the five women Professors were Ruth Bellairs in Embryology, Patricia Clarke FRS in Microbial Biochemistry, Annette Lavers in French, Elizabeth Robson in Genetics and Hannah Steinberg in Psychopharmacology. In the following Session, however, the number was to rise to six, with Professor Clarke's retirement being balanced by appointments of Professors Rachel Rosser and Ursula Mittwoch.

On the other hand, to any women of the staff of UCL who may feel discouraged by the still very small number of women Professors (5 out of a total professoriate of 139 in 1983-84) it is possible to show some statistics giving clear evidence of good promotion opportunities for women on the College's academic staff; opportunities which by 1983-84 had already raised the percentage of women listed among the College's Readers and Senior Lecturers in that year's Calendar to the *same* level (17 per cent) as their percentage among the College's Lecturers.

Actually, within the Departments specified as in Categories 1 and 2 of the table, the overall percentage of women among the total (just over 500) of those Departments' academic staff as strictly defined (Professors, readers, Senior Lecturers and Lecturers) was 21 per cent; essentially the same percentage being found in the Arts Faculty, the Medical Sciences Faculty and the Clinical Sciences Faculty. The percentage of women

among the Lecturers in those Departments was 24 per cent and the percentage among the Senior Lecturers and Readers was also 24 per cent, although the percentage among the Professors was only 6 per cent. Furthermore, the percentage of women among all those promoted during the five years 1980-84 to Senior Lectureships and Readerships in the Departments within Categories 1 and 2 was at the statistically indistinguishable level of 22 per cent (that is, 11 out of 49), indicating effective equality of opportunity for promotion of men and women to this level. The number of women proposed by the College for conferment of professorial titles was however 16 per cent (just 4 out of 25; but this shortfall is indeed not statistically significant within such a small total). In brief, there has been some real improvement although there may undoubtedly be scope for more.

An extraordinary contrast to the pattern just described was, in 1983-84, exhibited within the Departments specified as in Category 3 in the table. These are the Departments with significantly less women than men among their student body; which, to be sure, might lead one to expect a reduced percentage of women among their academic staff; yet it comes as a shock to find this percentage to have been only 3 per cent. Out of just under 300 academic staff within these Departments in Category 3 there were only 9 women in 1983-84. Nevertheless, they included 3 distinguished Readers: Susan Brown in Mathematics, Judith Milledge in Geology, and Gillian Peach in Physics and Astronomy; who were joined in the following year by Victoria Chick in Political Economy (the last two, incidentally, constituting the only women within that body of 50 members of academic staff in these Departments who were promoted in 1980-84.

Evidently, the message of WISE year (Women Into Science and Engineering) needs to be applied at UCL to more besides just the student body! It will be important to look for ways of attracting academically well qualified women on to the staff of Departments in these fields. (In this context it is at least a step in the right direction that since 1983-84 the Faculty of Engineering has raised its numbers of women Lecturers from 1 to 2.)

In the meantime, the last College Council of 1983-84 increased the number of women Heads of Department at UCL from 1 (Bette Robson in Genetics and Biometry) to 4; the new Heads being Annette Lavers in French, Laura Lepschy in Italian and Rachel Rosser in Psychiatry. This is an important advance at the key level of decision-making within the College.

Nevertheless, it will be evident from this report that much remains for further debate and investigation by UCL's flourishing Academic Women's Achievement Group, founding in 1979 and chaired since then by

Hannah Steinberg; a group which has made some most valuable contributions to the matters covered above. The AUT also has helped the College greatly in investigations of these important issues, aimed at ensuring that equality of opportunity is a reality for the academic staff of the College.

Looking to the future (which belongs to the young), it is satisfactory that the UCL student body is continuing to give an admirable lead, choosing two men and two women in UCLU's 1984 elections for new Sabbatical Officers and picking an equally well-balanced group of men and women for other key Union posts. Similarly, the 1983-84 sporting successes of the College were evenly distributed among the men's and women's teams; while, too, the academic successes of our men students and of our women students were equally outstanding. The College which pioneered the co-education of men and women can certainly be proud of the men and women students whom it now has the pleasure and privilege to teach.

STATISTICS OF MEN AND WOMEN AMONG UCL'S FULL-TIME STUDENTS

(home and overseas, undergraduate and postgraduate on 31 December 1983)

	Men	Women	Total	Percentage of Women
Category 1				
Mixed Social sciences/Natural Sciences Departments (Anthropology, Geography, Phonetics and Linguistics, Psychology)	274	624	898	69
Modern Languages and Literatures and associated studies (Dutch, English, French, German, Hebrew, Italian, Scandinavian, Spanish)	223	410	633	65
Category 2				
Other Humanities (Classical Archaeology, Egyptology, Greek and Latin, History, History and Philosophy of Science, History of Art, Library and Archive Studies, Philosophy)	273	337	610	55
Slade School of Fine Art	91	101	192	53
Medical and Dental Students (MBBS and BDS, pre-clinical and clinical)	399	396	795	50
Faculty of Laws	201	187	388	48
Science Students in Biological and Medical Disciplines (Botany and Microbiology, Zoology and Departments of the Faculties of Medical and Clinical Sciences)	253	225	478	47
Category 3				
Bartlett School of Architecture and Planning (excluding DPU students)	191	107	298	36
Mathematical Sciences (Computer Science, Mathematics, Statistical Science)	231	106	337	31
Department of Political Economy	222	91	313	29
Physical Sciences (Chemistry, Geology, Physics and Astronomy)	464	129	593	22
Faculty of Engineering	615	74	689	11
All Departments	3,437	2,787	6,224	45

Academic Initiatives and New Blood Appointments

In February and March 1984 special UGC grants were announced for the support of four new posts in the Faculty of Arts (of which one was a joint appointment with the Faculty of Laws and one a joint appointment with Birkbeck College), two new posts in the Faculty of Engineering and in the Faculty of Environmental Studies, three new posts in the Faculty of Science, and eight new posts in the Joint School of Medicine (three in the Faculty of Medical Sciences, one in the Faculty of Clinical Sciences, two at The Middlesex Hospital Medical School and two for a new Joint Department within the Joint School). These 18 posts included 13 out of 70 New Blood posts awarded to the University of London in March 1984, together with five out of 10 new academic posts allocated to the University out of UGC restructuring funds in February 1984. These new posts strengthen the College over wide areas of teaching and research and are a most satisfactory enhancement, following, as they do, the College's success in obtaining the award of similar posts in 1983. In addition to these 18 posts, a further two posts have been funded by the UGC under the Information Technology scheme: one post concerned with Image Processing in the Department of Physics and Astronomy and one concerned with Adaptive Systems for Reliable VLSI in the Department of Electronic and Electrical Engineering. As a result, the total posts gained come to a figure of 20.

The 20 posts in question, comprising the 13 New Blood posts, five posts under the London University Academic Initiatives scheme and two Information technology posts are as follows:

Department	*New Academic Post*	*Nature of Funding*
	Faculties of Arts and Laws	
History of Art	Lectureship in History of Dutch Art	New Blood (BA)
Italian	Lectureship in Italian Linguistics	New Blood (BA)
Political Economy jointly with Laws	Lectureship in Law and Economics	New Blood (ESRC)
Geography jointly with Birkbeck College Geography Department	Lectureship in Automated Cartography and Remote Sensing	New Blood (NERC)

Department	*New Academic Post*	*Nature of Funding*
	Faculties of Engineering and Environmental Studies	
Photogrammetry and Surveying	Lectureship in Photogrammetry	New Blood (NERC)
Electronic and Electrical Engineering	Lectureship in design of Integrated Circuits	Academic Initiative
Electronic and Electrical Engineering	Lectureship in Adaptive Systems for Reliable VLSI	New Blood (Information Technology—UGC)
The Bartlett School	Senior Lectureship in Building Design for Developing Countries	Academic Initiative
	Faculty of Science	
Geology	Lectureship in Palynology and Palynofacies	New Blood (NERC)
Physics and Astronomy	Lectureship in Ultraviolet Astronomy	New Blood (SERC)
Physics and Astronomy	Lectureship in Image Processing	New Blood (Information Technology—UGC)
Botany and Microbiology	Lectureship in Plant Biophysics, particularly in relation to photosynthesis	New Blood (SERC)
	THE JOINT SCHOOL	
	Faculty of Medical Sciences	
Biochemistry	Lectureship in Enzyme Biotechnology	New Blood (SERC)
Anatomy and Embryology	Lectureship in Mineralised Tissue Biology	Academic Initiative
Genetics and Biometry	Lectureship in Human Genetics	New Blood

Department	*New Academic Post*	*Nature of Funding*
	Faculty of Clinical Sciences	
Experimental Pathology	Lectureship in Transport and Chemical Processing of Viral Proteins with Cells	New Blood (MRC)
	The Middlesex Hospital Medical School	
Biochemistry	Lectureship in Biochemistry	New Blood (MRC)
Genito-urinary Medicine	Lectureship in Genito-urinary medicine	New Blood (MRC)
	New Joint School Department	
Joint Department of Primary Health Care	Chair of Primary Health Care	Academic Initiative
	Lectureship in Primary Health care	Academic Initiative

Key to initials of agencies co-sponsoring New Blood posts together with University Grants Committee:

BA (British Academy). ESRC (Economic and Social Research Council). NERC (Natural Environment Research Council). SERC (Science and Engineering Research Council). MRC (Medical Research Council).

Dialogue with the Court of the University of London

The first in a series of dialogues between the Court of the University of London and Schools within the University was held in the Council Room of the College on 21 May 1984. The twelve members of the University Court who visited UCL included Sir Michael Clapham, as Chairman, Professor (now Sir) Randolph Quirk, the Vice-Chancellor, and Dr William Taylor, the Principal. The College side was headed by Sir Peter Matthews, Chairman of Council, and the College team included Sir James Lighthill, the Provost, the three Vice-Provosts and the Secretary of the College.

The programme took the form of a wide-ranging discussion on a number of key matters of importance to the College and the meeting enabled the College to present matters thoroughly and yet in an informal way. The discussions lasted some three hours and were followed by a luncheon. The Vice-Chancellor commented favourably on the day, and the College was pleased with the outcome.

Some key matters were set in hand and important results are forthcoming already in certain areas (see Provost's Foreword).

Restructuring of the University

Restructuring within the University of London has continued during the past year and University College London has been concerned with changes in Italian, Mathematics and Physics. Following discussions with Bedford College, in connection with Italian and Mathematics, and with Westfield College, on Physics, a most satisfactory conclusion has been reached in the three subject areas. In each case the College has gained staff and the necessary finance and equipment and we have been grateful for the supporting close co-operation of both Bedford and Westfield Colleges. The College welcomed the following new members of academic staff: Dr P. J. Armour, Department of Italian; Mrs P. A. James, Department of Italian; Professor P. M. Cohn, Department of Mathematics; Dr W. J. Dicks, Department of Mathematics; Dr F. W. Stephenson, Department of Mathematics; Dr C. Cooke, Department of Physics and Astronomy.

Progress in the Joint School of Medicine

Most encouraging progress has been made towards the formation of a unified School of Medicine within UCL, to include the Faculties of Medical and Clinical Sciences, the Middlesex Hospital Medical School and the Institutes of Laryngology and Otology, Orthopaedics and Urology.

A small working-party was set up by the Joint School Co-ordinating Committee to formulate a mutually agreeable scheme for academic union. Its report has been accepted by all the institutions concerned, and the way is now clear to work out detailed proposals for consideration by the respective Governing Bodies. To this end a Unification Sub-Committee has been established under the Chairmanship of the Vice-Provost (Medicine) of UCL, Professor Deny Fairweather. This sub-committee has set up a number of advisory working parties to consider the legal aspects of unification, finance, student affairs, services, and other related matters. The intention is that these should report by Easter 1985, and a detailed scheme for unification be prepared by October of that year. The proposed date for its implementation is August 1987.

The clinical academic future of the new School is inextricably involved with NHS plans for the future of the Bloomsbury and Islington districts, and the Provost now chairs an Academic/NHS Co-ordinating Committee whose major purpose is to represent to the NHS the needs of clinical teaching and research.

UGC Questionnaire

The College contributed a very full answer to the questions posed in the University Grants Committee's 1983 Questionnaire, which involved all parts of the College and a great deal of work. The final production encompassed a most comprehensive answer to Question 1, which covered the academic plans envisaged for the College during the next six years. This key policy statement enabled the College to provide in broad detail its subject area plans as well as reflecting the state of College academic and administrative staffing and performance after the enforced financial cuts that have taken place in the past four years. The College paper has been used extensively and formed the basis of UCL's discussions with the Court during the Court dialogue. It will be used too in the discussions with the Steering Committee for the Efficiency Studies exercise, which is taking place in the autumn of 1984.

Overall, the questionnaire dealt with every aspect of University planning, teaching, research and administration. UCL believes that the paper submitted was not only of great use to the University Grants Committee but also within the University of London and the College. The UGC published its report *A Strategy for Higher Education into the 1990s* in September 1984 and generally this was in line with the College's views on the key issues. It is to be hoped that the Government will respond favourably to the UGC's contention that universities must be given strong backing by Government and, indeed, expanded rather than contracted.

CVCP Steering Committee for Efficiency Studies

University College London was invited, in June 1984, to be one of six universities in the United Kingdom to udnertake an Efficiency Study, which has been set in hand by the Committee of Vice-Chancellors and Principals of the Universities of the United Kingdom. Sir Alex Jarratt, Chairman of Reed International and Chancellor of Birmingham University, is chairing the Steering Committee which has been deputed to carry out this task; and the universities selected are those of Edinburgh, Essex, Nottingham, Loughborough, Sheffield and University College London. Edinburgh University and University College London have as their special subject area for study that of financial management. General management is to be studied in all the six universities and the universities in question have been paired so that it is possible to have a comparison of methods used within special areas for study.

Deloitte, Haskins and Sells have been chosen as the Management Consultants, and are working in conjunction with the College Study Officer, Mr A. C. Howe, the College Internal Auditor. The College has deputed a small committee to support Mr Howe in his considerable tasks of carrying out the study, as directed by the Steering Committee. The team is as follows: Dr D. G. Davis, Department of Astronomy and Physics; Mr A. D. E. Lewis, Department of Laws; Mr E. W. Bridger, Assistant Secretary (Personnel); Mr M. H. Butcher, Deputy Registrar; Mr J. R. Clements, Deputy Finance Officer; Mr R. W. Marlow, Assistant Bursar.

The Study Officer is required to produce his report to the Steering Committee by late January 1985 and the Committee are to render their report to the CVCP by the spring of 1985.

Overseas Students

Successive and unreasonably frequent changes in recent years in the definition of students as 'overseas' for the purposes of fees and statistical analyses have made it increasingly difficult to make meaningful comparisons between year and year and in consequence not easy to calculate the College's measure of success in implementing point seven of the Provost's seven point plan (see Annual Report for 1982-83) for coping with the Government's economies. However it seems probable that by 1984-85 we shall be in a position in regard to numbers of students domiciled abroad comparable with that of the late seventies but only 800 or so will be paying the higher fee. The recruitment situation is buoyant and were it not for the litigation brought upon the College by the latest definition of 'ordinary

residence' incorporated in the Education (Fees and Awards) Act of July 1983 the College would look forward with well-merited satisfaction to the continuing increase in its overseas student population.

The introduction of the joint British and Hong Kong Government Fees Support scheme has restored the number of students from the Colony to the high level which it had held prior to the imposition of the 'economic' fee and the number of students from Singapore and Malaysia is climbing steadily. The British Council initiative (Exchange with China Scheme) may be expected to improve this position still further.

The biggest increase is in the area of the Junior Year Abroad group of students from the United States in which the numbers have leaped in the past three years and may be expected in 1984-85 to be 122 per cent greater than they were in 1979, the year when the economies programme began.

General Review of College Finances

The Court Recurrent Grant from UGC funds to the College for 1983-84 was announced in May 1983. This was the last of the three years during which the Government's massive cuts in UGC funding for universities was implemented. The level of Grant confirmed that the College had suffered a reduction in real terms of 20 per cent of its Recurrent Grant support during the period from 1980 to 1984. There is no doubt that this would have been very much worse had the Court not introduced the 'Research Factor' into its Grant Allocation procedures. The very high level of external support at UCL ensured that the College was one of the main beneficiaries for the second year running.

Indeed, when UGC and external sources are combined, the overall level of College funding has actually increased during the period since 1980. This process has been accelerated during 1983-84 by further awards of New Blood and Academic Initiative posts in selected areas and by the transfer of staff from other Colleges as part of the University's restructuring programme for London. However, these welcome additional resources are earmarked for specific new purposes and so do not compensate for the loss of Recurrent Grant support for existing commitments. Consequently, it was some relief to be able to confirm that the existing savings targets, calculated and implemented in anticipation of the Grant level, did not require any upward revision after the announcement of Court Grant for the year. This was the first occasion since 1980 that the announcement had not been the prelude to increased savings programmes.

In pursuance of its targets, the College remained broadly on course to achieve its voluntary early retirements under the UGC-funded scheme

augmented by a further fund created by the College under similar personal terms, but where other aspects of UGC conditions could not be met in full (principally the loss of a whole post). On the other hand, the rate of savings from natural wastage slowed down during the year. This was caused by a reduction in the opportunities for such savings due to less staff movement in the higher education sector. Additional savings in other areas, notably maintenance of premises, ensured that the College ended the year on target in relation to its longer term deficit-financing programme. For the future, much depends on the extent of the Government's deviation from earlier promises of 'level funding' after 1983-84.

The College has continued to maintain a realistic level of reserve for the future maintenance of its buildings and student residences, in marked contrast to other university institutions these reserves have also ensured that the funding of its deficit remains in-house and that no outside borrowing has been required.

College Sites and Buildings

After several lean years for major building projects, 1984 has seen two large projects going on in the Rectangle at the same time.

The completion of the Gower Street entrance started on site in July 1983 and the scheme is proceeding according to schedule. This satisfactory rate of progress has been made possible by the decision to pre-order the Portland stone facings which have been quarried, dressed, carved and delivered to site as and when the contractor has been ready for them. This project was chosen for public viewing as part of the Institute of Builders' 150th Anniversary 'Building Tomorrow's Heritage'. The Contractors erected a Portakabin to house an exhibition of material on the project and a viewing platform providing College staff and students and the public with a grandstand view of the work in progress. When the scheme is complete, the gates can then be opened again and the College can receive visitors properly through a Quadrangle even more dignified than before.

Many people in the College who have enjoyed the space without cars would like the amount of parking reduced in future or even eliminated from the Front Quadrangle altogether. Proposals for short-term and long-term improvements to the landscaping have been discussed by Planning and Buildings Committee, and by its Decorations and Gardens Sub-Committee, with advice from the architects for the project, the Casson Conder Partnership. The funding of a major redesign is not possible in present financial circumstances; however, it is planned to carry out some improvements including the removal of the two temporary huts and a

restriction on parking in front of Wilkins's portico. A limited amount of parking will be provided more discreetly north and south of the portico.

The other major building contract is the reconstruction and conversion of the two top floors of the Kathleen Lonsdale Building for the Sandoz Institute. The whole of the top floor, built in the 1950s of a rather lightweight structure, has been removed and a new top floor is being built with a mansard roof clad in slate. The lower floors of the building have in the main part been occupied throughout the construction work. The occupants have regrettably suffered a great deal of noise, dust and vibration, particularly in the early demolition stage of the work. As the scaffolding is dismantled, the emergence of the Gower Place elevation newly-cleaned and with a more dignified slated mansard roof will be a major improvement to the north face of the Rectangle.

While these two major projects have been dominant and have affeted the access and working conditions of the College, a number of less well publicised jobs have been carried out. These include the reorganisation of the Dissecting Laboratory in Anatomy; alterations and refurbishing of the Union bar and the construction of a new staircase to link the upper and lower refectories. The servery of the lower refectory is now completely remodelled and refitted with modern equipment.

Prospects of filling the gap on the east face of the Rectangle by building the proposed new building for the Students' Union continue to be frustrated by lack of funds for such a major project. a sub-committee of Planning and Buildings Committee, chaired by Sir Colin Crowe, has been active in reviewing this project and studying possible alternative options for short-term and long-term improvements to the present unsatisfactory facilities. The sub-committee is currently working on changes to the Central Collegiate Building to increase utilisation of the upper floors as a short-term measure.

In the Faculty of Clinical Sciences a new two-storey laboratory block has been completed for the Leukaemia Research Unit. The site was entirely surrounded by existing buildings with basements. The difficulty of access, and lack of any working space posed severe problems during the construction period particularly during the construction of the necessarily deep foundations. inside the Clinical Sciences Faculty building a scheme has been completed for the Neo-Natal Unit including a new electron microscope.

A number of schemes are in various stages of preparation. Of these, unfortunately, difficulties over obtaining vacant possession of the site have further delayed the start of the final phase of Ramsay Hall. But a major project at the Whittington Hospital for the Academic Department of

Endocrinology and Diabetes has started on site. This will make a considerable increase to academic space at the Whittington. The project for new teaching accommodation there is now in the detailed design stage as part of the major new surgical block being planned by the Regional Health Authority.

In early stages of preparation are schemes for new laboratories for Medical Microbiology, an extension for the Department of Electronic and Electrical Engineering, and the acquisition of additional space in Gower Street and Gordon Square to ease congestion and bring about joint working with the Departments of Chemistry and History of Art of Birkbeck College.

It has been one of the most exciting years for building in the College since the early 1970s.

150th Anniversary Appeal

The Committee for the 150th Anniversary Appeal of University College London was set up in 1972 and since that time has done sterling work for the College in planning the Appeal and, since 1980, in securing contributions to it. In 1979 the final decisions regarding the adoption of four Appeal projects were taken. In 1981, after considerable success in securing pre-launch donations had been achieved, the Appeal was officially launched on the occasion of the first visit to UCL by the new Chancellor of the University, Her Royal Highness Princess Anne. Individual members of the Appeal Committee, led by its Chairman Lord Goodman, Chairman of College Council, Sir Peter Matthews, Treasurer, Mr Hugh Priestley, and former Chairman and Treasurer, Sir Bernard Waley-Cohen and Sir Francis Sandilands, respectively, were most generous as contributors and most effectively persuasive in securing donations and covenants from individuals, companies and trusts. Some substantial benefits flowed from the 1983 Mansion House Dinner organised under Sir Bernard's aegis. Members of the College, including staff and former students, made most important contributions. The Committee was served by two vigorous and effective appeal Directors and by a devoted and energetic secretariat.

This sum was supplemented, in relation to the work on projects, by the proceeds of an arrangement whereby a 30-year lease on the upper two floors of the Kathleen Lonsdale Building was sold to the Pharmaceutical firm Sandoz for a premium of £2,500,000. These floors represented space which was becoming practically unusable for academic purposes unless very large sums could be spent on it (and, indeed, Sandoz are spending a further £2,500,000 on making it suitable for use as a scientific research

laboratory, working in an area of great promise for academic collaboration with UCL). Academic Board felt able to agree to the associated loss of space for academic purposes provided it could be made up elsewhere in the College.

The combination of the Appeal contributions and the Sandoz premium this summer just reached the figure required to cover the cost of two of the original Appeal projects. One of these, the completion of the Christopher Ingold Laboratories for the Department of Chemistry, was carried out by mid-1983 as a necessary part of the agreement with Sandoz to allow the re-housing of staff formerly occupying the two upper floors of the Kathleen Lonsdale Building. The other project, the completion of the College's main entrance in Gower Street was also an essential part of the arrangement (to meet the condition set by Academic Board), and proved to be a project that fired the imagination of well-wishers of the College. It is most satisfactory that the funds for this important development are now fully secure as a result of the combined benefits of the Sandoz agreement and the great efforts made in the course of the 150th Anniversary Appeal.

During 1983-84 a careful look at the possibility of raising funds for the Appeal Committee's third major project, the new Union building, has been taken by a special Sub-Committee which included major Union representation and was chaired by the Vice-Chairman of Council, Sir Colin Crowe. This Sub-Committee was ultimately forced to conclude that the long overdue and highly necessary and desirable project for a new Union building demanded a level of expenditure of some £4,000,000, which was simply not attainable by Appeal, from any other source of funds, or by a combination of both. Similarly, the attempt to fund a new Egyptology Department and Museum, at a cost of over a £1,000,000, has been unsuccessful despite special efforts. The Head of Department has very reluctantly accepted that it will not be possible to proceed.

With these considerations in mind the Appeal Committee concluded that the Appeal, directed towards four main projects, should now be wound up. The College will nonetheless continue to appeal to its devoted well-wishers for very many particular purposes: indeed, it may in future be easier when it becomes necessary to launch *ad hoc* appeals for smaller objectives to do so without feeling the risk of conflict with the 150th Anniversary Appeal itself.

The Committee wishes to express its heartfelt gratitude to the numerous friends and colleagues who have given invaluable assistance, and especialy to the Appeal Office staff, Miss Lella Raymond and Miss Joan Ingram, and to Mrs Edna Kerner and Mr W. B. Ellis of the Finance Division, who guided the way through the arcane complexities of accounts and covenants.

Renaming of buildings

With the incorporation of the Centre for Environmental Studies Library into the Wates House Library it was agreed that the new enlarged Library be renamed 'The Llewelyn-Davies Library' in memory of the late Lord Llewelyn-Davies, who was Professor of Architecture and Urban Planning and a former Head of the Bartlett School.

In view of the association of Jeremy Bentham with the College, with important reforms in the law instituted by him and with legal scholarship in particular, it was agreed that Thorne House be renamed 'Bentham House' to commemorate Jeremy Bentham.

The Greening of UCL

The enthusiasts who meet from time to time as the Decorations and Gardens Sub-Committee have for long been quietly and skilfully tending such greenery as exists on the College's ten acres, and making good use of opportunities to plant more. This work, done on a shoestring budget, has expanded during the past year, with the completion of a small garden on waste land at the back of the Gordon Square houses, and the growth of wall-covering climbers, border shrubs and flowers in the vicinity of the South Junction and the Gordon Street entrance.

Two new landscape projects have been planned during the year and will be showing results during 1985-86. The first, and most important of these arises from the completion of the Gower Street frontage. This, to a design by the architects for the new building itself, will include tree and shrub planting, new railings and paving at the entrance to the College, and refurbishment of the Front Quadrangle. With the removal of the two temporary huts the reduction of parking and the extension of the lawns, the effect will be in every sense a landmark in the improvement of the College's fine historic setting. The second aims to soften the hard landscape at the back of the College by planting trees and shrubs in well-designed containers at key points along the main ways through the College and in the open areas. In the current financial climate only a small start can be made, but it is hoped that this can continue in years to come, and that the greening of UCL will keep up momentum.

College Administration

The College Administration has continued to be extremely busy at a time of restructuring and of enforced administrative and staff reductions.

Mr I. H. Baker, the Secretary of the College, and the four Heads of Administrative Divisions have been much concerned with ensuring that reductions in staff have been affected in a way which will preserve maximum efficiency in key areas. Computerisation and enhanced management information systems have continued to be of great importance. The structure of management within the Central Administration has been improved and is operating effectively to reduce all unnecessary overheads. In general, there is a much wider span of management than in the past and many procedures have been streamlined in order to achieve the most cost-effective results. The Bursar's Department has had a very full load, involving much work with the Gower Street extension, the new Sandoz building, the DMS Watson Library and the Refectories, as well as the usual wide spread of building and maintenance requirements. The Finance Division has been fully committed with an even greater load and has been much concerned with computer-aided developments. Changes in the organisation of the Registrar's Division have been implemented to ensure its successful working with reduced staff. The General Division has initiated a number of enterprising ventures during the year, including improvements in the Catering and Security areas of operations. The Residence Office has coped most successfully with its important and demanding field. The Personnel Department has had much with which to contend in restructuring and will be increasingly busy in the formation of the new Joint School of Medicine.

The administration is poised for the Efficiency Studies exercise and further requirements in preparation for the setting up of the Joint School of Medicine, which will take up a great deal of time during the coming session. Overall, the Administration continues to be ready to respond to the challenges that are presented in the wide-ranging administrative load that comes its way. Emphasis is placed on the need to maintain high standards, cheerfully, despite the enforced reductions in staff. The Secretary of the College has drawn attention to the need for a continued flexible response at a difficult time.

Changes in staff during the year (see page 60) have included the departure of Mr L. E. Bryett, Deputy Bursar, Mrs W. P. Bourne, Senior Assistant Registrar (Student Administration), Mr J. W. Cruddas, Senior Assistant Registrar (Student Finance), Mr A. J. Goodman, Assistant Systems Manager and Mrs E. Foster, Records Officer. We wish them every happiness in the future, and thank them for their contribution to the work of the College.

Staff Training

This year saw a consolidation of the programme of in-house training activities for staff. The programme included lecture practice and student interviewing sessions for academic staff; customer-handling skills sessions for catering staff; a supervisory skills course for technical staff; a workshop on the management of resources for academic and administrative staff; workshops on working relations and interviewing skills. There have also been regular induction sessions for new members of the non-academic staff as well as the established induction session for new academics.

Student Numbers

On 31 December 1983 there were 6,865 students registered at the College (including those in the Faculty of Clinical Sciences). 5,017 were full-time undergraduates, of whom 1,685 were newly-admitted students.

The total postgraduate population at the same date stood at 1,797. Of these, 1,262 were studying on a full-time basis and 535 were part-time. Forty-four per cent of the full-time postgraduates and 61 per cent of the part-time postgraduate students were undertaking research.

The College still attracts large numbers of students from overseas. The total overseas student population at 31 December 1983 was 1,120. At this date there were 456 full-time students from 36 Commonwealth countries and 531 from other foreign countries, the latter category including 142 from EEC nations; of these full-time students, 485 were studying at postgraduate level. There were 133 part-time overseas students, 108 of these being postgraduates.

The number of full-time students who paid the overseas higher rate of fee was 830 at 31 December 1983, 13.22 per cent of the total College full-time population.

Of the full-time undergraduate students in attendance at the College 620 were housed in College Halls of residence, 1,000 in the College houses and 280 in the University Halls of Residence. Those residing in lodgings totalled 2,130 and the remaining 990 lived at home.

Academic Matters

In the progress towards the full establishment of a Joint, and ultimately single, Medical School with The Middlesex Hospital Medical School, a number of joint departments have been instituted between the two Schools. A joint Department of Psychiatry comprising the UCL

Department of Mental Health and the Academic Department of Psychiatry at The MHMS has been set up and Dr Rachel Rosser, Reader in Psychiatry at the Charing Cross Hospital Medical School, has been appointed to the new Joint Chair of Psychiatry and to the Headship of the Department. From October a Joint Department of Medical Microbiology was established and Professor J. R. Pattison, Professor of Medical Microbiology at King's College School of Medicine, took up the Joint Chair of Medical Microbiology and the Headship of the Department in April. In the Report for 1982-83 it was stated that the University was to be invited to fill the Chair of Community Medicine in the new Joint Department and an appointment to this Chair and the Headship of the Department has now been made; a detailed report on this will appear in the 1984-85 Report.

The first Department in the Faculty of Medical Sciences to become a Joint Department is Physiology and Professor T. J. Biscoe has been appointed Head.

In 1983 it was agreed that the Department of Geriatric Medicine should become a constituent unit of the Department of Medicine. In the course of 1983-84 further discussions took place on the future of Geriatric Medicine in the light of the retirement of Professor A. N. Exton Smith, Barlow Professor of Geriatric Medicine, and it has just been agreed that a Joint Department of Geriatric Medicine will be established in 1985. The University has approved the establishment of the Barlow Chair of Geriatric Medicine as jointly tenable at UCL and The MHMS and an appointment to the Chair and the Headship of the Department has been made.

In May the UGC Panel on Subjects Allied to Medicine made a visitation to the College, in particular to review the work of the Department of Pharmacology and the Medicinal Chemistry course. The Panel held discussions with the Provost, the Dean of the faculty of Medical Sciences, the Head of Department, Professorial staff, non-professorial staff and student representatives, and the work of the College in these areas was received with satisfaction.

Visitors to College

During the course of the year there were two Royal visitors, as well as a small party of Members of Parliament with London constituencies. Her Royal Highness Princess Anne, Chancellor of London University, was the guest of honour at a dinner given by the Women's Dining Club on Friday 2 March 1984. The dinner was attended by some seventy members and fifty guests, together with twelve guests of the Club. Present during the evening were the Vice-Chancellor of the University Professor (now Sir)

Randolph Quirk, the Principal of the University, Dr William Taylor and Mrs Taylor, the Provost and Lady Lighthill, and the Secretary of the College and Mrs Baker.

Her Majesty Queen Elizabeth The Queen Mother visited the Faculty of Clinical Sciences on Thursday 5 April 1984 to open the Lew Cohen Leukaemia Research Unit in the Department of Haematology. Her Majesty was met by the Provost and the Secretary of the College and Professor Denys Fairweather, Dean of the Faculty of Clinical Sciences, conducted Her Majesty round the Faculty. The Leukaemia Research Unit has been built with the help of generous benefactions from the Sportsman's Aid Society, the National Medical Research Fund and the UCH Special Trustees and by the efforts of the UCL Clinical Medical Students, who raised £15,000 during their 1983 Rag Week. The Unit will concentrate on research into various forms of treatment of leukaemia including autologous bone marrow transplantation, a new method of treating leukaemia patients which is being developed at University College Hospital. During the course of the visit Her Majesty met Professor E. R. Heuhns, Head of the department of Haematology, Mr J. Coral, President of the Sportsman's Aid Society, Mr Lew Cohen, Honorary Administrator of the Sportsman's Aid Society, and Dr A. Goldstone, Consultant Haematologist at University College Hospital.

Three Members of Parliament with London constituencies accepted an invitation to visit the College on Wednesday 21 March 1984. Sir Geoffrey Finsberg, MBE, JP, MP, Conservative Member for Hampstead and Highgate, visited the Department of Obstetrics and Gynaecology and the Department of Chemistry. Mr Ivor Stanbrook, Conservative Member for Orpington, and Mr Brian Sedgemore MP, Labour Member for Hackney South and Shoreditch, visited the Dental School and the Department of Electronic and Electrical Engineering. All three Members of Parliament were greeted by the Provost and the Secretary of the College and were joined by Professor D. W. James, Vice-Provost (Medical). A briefing by the Provost was followed by a general discussion and the visit concluded with a lunch.

Bandung Project

The first phase of the College's academic consultancy contract with the Government of Indonesia was completed in August. In this project the College is helping to establish two Master's Degree courses at the Institute of Technology in Bandung. The fundamental purpose of the work is to assist in the education to international academic standards of both regional

and city planners on the one hand, and highway engineers on the other hand. The objective is to train graduates not only with high professional standards in their respective fields, but also with a systematic appreciation of their wider roles in Indonesia's national and regional development efforts. At the end of the first two years of the contract, the academic bases of the two courses have been established, the working syllabus for each programme has been finalised, and the teaching of the courses has commenced.

The contract has now been renewed for a further two years to August 1986. The dominant theme of this second phase of the work will be the integration of the graduate level academic programmes with the roads and regional development strategy of the national effort. This integration will be achieved by linking the academic and teaching aspects of the project in Bandung directly to relevant consultancy activities of Government departments in Jakarta.

The project involves seven full-time members of UCL staff in Bandung, together with a considerable programme of short-term visits. The total contract sum involved is in excess of $5 million funded by a loan from the World Bank and administered through the College's Academic Services Unit.

Following a visit to the College by the Rector of ITB, the Provost made a brief but highly successful visit to Bandung in January. As a direct result of the Provost's visit, arrangements have been agreed with the British Council for exchange visits of senior academic staff. This initiative will expand the collaborative links between the College and ITB, particularly in the fields of biotechnology, microelectronics and applied mathematics.

College Language Laboratory

In November 1983 the Dean of the Faculty of Arts put to the Provost a proposal that the College should consider setting up a language laboratory. In part this initiative was a response to national trends: the decline in the standard of language teaching in the schools, the consequent need for more intensive language instruction at university, the growth of *ab initio* courses in the foreign languages at university level; but internal factors also played a part. The transfer, as part of a university restructuring exercise, of the Department of Dutch from Bedford College brought into UCL a language department with great expertise in the use of the language laboratory The appropriate College committees all expressed themselves in favour of the proposal, and Council gave formal approval in February 1984. Immediately a steering group was set up to bring the plan to fruition. A site for the

laboratory has now been found, the basement room of 18 Gordon Square, and the Court has generously offered a subventio towards some of the refurbishment costs. The Dean of the Faculty of Arts circulated a questionnaire throughout the College in order to ascertain the likely pattern of use and the responses confirmed what had already emerged in informal discussions, namely that the need for a language laboratory is by no means confined to the language departments, nor even to the Arts Faculty. The laboratory promises to be a College-wide asset in which Honours language instruction, service teaching, and private study will take place.

Computer Centre

There have been major changes in the Computer Centre. As part of its 'mid-term' review procedure the Computer Board for Universities and Research Councils agreed to replace the four GEC 4082 systems by five of the newer and much more powerful GEC 4190 computers, at a cost of almost £400,000. The first three machines were installed in December 1982 and the other two in August 1983. At the same time significant changes were made to the operating software, to bring the number of simultaneous users up to almost 100. A further GEC 4190 was installed in January 1984 as a 'Campus Packet Switched Exchange', to provide improved communication facilities between computers on the College site and the national academic network.

New Courses

In October 1983 teaching commenced for the BA Degree in Classical Archaeology and for the BA Degree in Latin and Italian Studies. A new field of study in Exploration Geophysics was introduced for the BSc Degree. A number of new Master's Degree courses were introduced including the MA in Anglo-American Literary Relations, the MA in History and Social Anthropology and the MSc in Applied Molecular Biology and Biotechnology. In the Faculty of Science an MSc Degree in remote Sensing was introduced, the course being jointly run by UCL and Imperial College. In Engineering, teaching commenced for an MSc Degree in Information Technology, this course having been promoted by new appointments granted to the College under the Government's IT scheme. The College also introduced College Diplomas in Computer Science, International Business Law, and Information Technology.

The Library

Considerable effort continues to be made in pursuit of the Library's principal objective, the maintenance of the excellence of the collections in the face of severe economic pressures. The cost of the Library's periodical subscriptions rose by 22 per cent during the Session, and the number of Library staff again fell to meet savings targets. The College's response to this situation has been positive and effective. Agreement was reached, through the Working Party on Rationalisation of Library Resources in Bloomsbury, that the Library should receive £60,000 per annum at 1983-84 prices to maintain the scientific research collections at University College, in return for the admission of those members of the University who would otherwise have used the collections in the University Library. The effect of the income received through such worthwhile collaboration is that cuts in periodical subscriptions have been avoided, and also members of University College will benefit through the opening of the DMS Watson Library on Saturdays. The staffing situation has also been eased by the agreement of Council to finance the appointment of two new posts of Assistant Librarian from the College's non-UGC income. Pressure upon both book funds and staffing continue to be severe, however, and the Library is in the position of an athlete running very hard against a head wind to stand still.

The Bloomsbury rationalisation proposal also made possible the alterations to the DMS Watson Library which are a necessary first step towards the establishment of a Bloomsbury Science Library. This project is an important part of an exercise to obtain the most effective use of the space available to the Library in the light of the growth of the collections and the reduction in Library staffing. Using resources effectively and also improving the service to readers were the motives which led to the introduction of the GEAC borrowing system in September 1984. The long-term benefits from this system will be substantial and tribute must be paid to the many members of Library staff whose work during the session in bar-coding books and entering author-title information through terminals has enabled the system to become operational.

Public Lectures

The following public lectures were among those arranged by the College during the session: The Barlow Lectures on Dante by (i) Dr Lino Pertile (University of Sussex) on 'Dante and Two Renaissance Readers: Trifone Gabriele and Pietro Bembo', (ii) Mr Michael Caesar (University of Kent) on 'Dante and History in the Nineteenth Century', (iii) Professor Peter Brand, (University of Edinburgh) on 'Dante and the Romantics',

(iv) Mr Zygmunt Baranski (University of Reading) on 'The Power of Influence: Dante in the Twentieth Century', (v) Mr David Robey (Wolfson College, Oxford) on 'Formalism and Structuralism in Modern Studies of the "Comedy" '; Chambers Memorial Lecture by Professor S. Greenbaum (Quain Professor of English Language and Literature) on 'Good English' (Inaugural Lecture); Commonwealth Fund Lecture in American History by Professor Robert Dallek (University of California, Los Angeles) on 'Cultural Politics and Foreign Affairs: The United States during World War II'; Durning-Lawrence lectures in the History of Art by Mr Eric Fernie (University of East Anglia) on 'Design and Archaeology in the Study of English Medieval Church Architecture' (six lectures); Freud Memorial Lectures in psychoanalysis by Professor Albert J. Solnit (Yale University) on 'Preparing and Remembering: Contributions to a Psychoanalytic View of Human Development' (four lectures); S. V. Keeling Memorial Lecture in Greek Philosophy by Mr Jonathan Barnes (Balliol College, Oxford) on ' "A Third Kind of Logic" — the discovery of the logic of relations'; Neale Lecture in English History by Dr G. E. Aylmer (Master, St Peter's College, Oxford) on 'The English Civil War in Fiction and in Fact'; Lord Northcliffe Lectures in Literature by Professor Francis Haskell (Trinity College, Oxford) on 'The Visual Arts and Historical Thought — an Uneasy Relationship' (three lectures); Rickman Godlee Lecture by Dr J. D. Watson (Cold Spring Harbor Laboratory, New York) on 'Functioning of the Human Ras Cancer Genes'; Seaton Memorial Lecture by Mr John Porteous on 'Emblem or Emblazonry? A Problem in Modern Coin Design'; Shearman Memorial Lectures by (i) Professor J. H. Burns on 'Jeremy Bentham: from radical enlightenment to philosophical radicalism', (ii) Dr John Dinwiddy on 'Bentham and the Early Nineteenth Century', (iii) Professor W. L. Twining on 'Why Bentham?'; Smith Kline and French Laboratories Lecture in the Allied Health Sciences by Professor Paul C. Lauterbur (The State University of New York at Stony Brook) on 'NMR Imaging in Biology and Medicine'; The First Stewartson Memorial Lecture by Professor F. T. Smith (Imperial College of Science and Technology) on 'D'Alembert's Paradox'; William Townsend lecture by Mr Richard Rogers (Richard Rogers and Partners) on 'The Crisis of Public Space and the Language of Architecture'. Inaugural Lectures were given by Professor M. G. Audley-Charles (Yates-Goldsmid Professor of Geology) on 'Thick Skin Tectonics', Professor M. S. Deol (Genetics) on 'Genetics and Hearing', Professor I. A. Harley (Photogrammetry and Surveying) on 'A Survey', Professor Ted Honderich (Philosophy) on 'The Mind, Neuroscience, and Life-Hopes', Professor R. D. Martin (Physical Anthropology) on 'Physical Anthropology and the Comparative Method',

Professor L. J. Rydill (Naval Architecture) on 'What is the Future for Naval Architecture?'; Current legal Problems Lectures were given by (i) Mr M. D. A. Freeman on 'Law and Order in 1984', (ii) Mrs Jill E. Martin (King's College, London) on 'Landlord and Tenant: Recent Developments in Negligence Liability', (iii) Mr Stuart Anderson (Fellow, Hertford College, Oxford) on 'Land Law Texts and the Explanation of 1925', (iv) Professor E. D. Brown (UWIST) on 'The United Nations Convention on the Law of the Sea, 1982', (v) Dr F. Parkinson on 'The United Nations Code of Conduct for Liner Conferences' (vi) Sir Michael Mustill (a Judge of the Queen's Bench Division) on 'Trans-National Arbitration and English Law'; a lecture in Anatomy was given by Professor Jean-Pierre Changeux (Institut Pasteur and the College de France, Paris) on 'The Structure and Function of the Acetylcholine Receptor'; the second Annual Lecture in Biochemical Engineering and Biotechnology was given by Professor J. G. Kuenen (Delft University of Technology) on 'Colourless Sulphur Bacteria in Waste Treatment: the Contribution of Microbial Physiology to a Problem of Economic Importance; Lectures in Laws were given by (i) Professor Anthony Ogus (University of Newcastle) on 'Do we have a General Theory of compensation?', (ii) Professor Edward Griew (University of Leicester) on 'Lets's Implement "Butler" on Mental Disorder and Crime!'; a lecture to mark the opening of an exhibition of the George Orwell Archive was given by Professor Peter Davison (University of Kent) on 'What Orwell Really Wrote'; a lecture was given by Professor Hans Kalmus on '50 Years of Exiles Working at University College'.

Assembly of Faculties

The 1984 Assembly of Faculties was once again blessed by fine weather and attracted strong support from final year undergraduates, parents and staff of the College. The Assembly was addressed by the Right Honourable Lord Weinstock, Managing Director of GEC, who presented a most thoughtful address on the subject of the relationship between the Universities and Industry. Those present then adjourned to the Quadrangle where refreshments and wine were taken in brilliant sunshine and entertainment was provided by the Chinese and Malaysian Students' Societies, who performed their Lion and Bamboo Dances respectively. Visitors had a variety of displays to occupy their attention, ranging from work presented by various departments of the College to viewing the progress made on the Gower Street Front extension.

Schools Conference

For the eighteenth year the College welcomed headteachers and their representatives from 69 schools and sixth-form colleges to the Schools Conference which was held on 28 and 29 March 1984. After an introductory speech by the Provost the visitors enjoyed talks by Professor M. W. Swales on 'The legacy of irreverence' and by Professor C. G. Clark, 'If I can help somebody'. Groups of teachers went on to visit departments where they were able to meet members of staff and discuss admissions and other academic matters. A feature of the Conference much appreciated by the teachers was the active participation in the proceedings of so many College staff. Ramsay Hall, where the visitors were accommodated, provided a splendid opportunity for them to experience at first-hand the quality of student residential facilties.

Friends of University College London

During the year the Friends of University College London supported a wide range of projects of benefit both to staff and students. Grants included £250 to the Faculty of Engineering for the improvement of amenities, £3,400 to the College for purchase of two wall-mounted showcases to form part of the permanent exhibition of College history and work in progress, £50 to the Amateur Radio Society, £360 to the Rugby Club and two separate grants to the Union, the larger (£5,000) towards the cost of a computer system. In addition the Friends established a prize for literary composition in memory of Baron Evans of Hungershall, former Provost of the College.

HONOURS AND DISTINCTIONS

In the Queen's Birthday Honours Professor J. R. Hale, Professor of Italian, was created a Knight Bachelor. Mr N. Georiadis, Lecturer in the Slade School, received the CBE and Beadle J. T. Rilley the BEM.

Important appointments announced during the session included the appointment of Professor J. R. Hale as a Trustee of the Victoria and Albert Museum and as Chairman of the Advisory Committee, Government Art Collection. Emeritus Professor Sir Andrew Huxley and Sir Denis Rooke, Fellow of the College, were appointed Trustees of the Science Museum. Professor Huxley was also elected Master of Trinity College Cambridge. The appointment of Trustees to the first Board of the Royal Botanic Gardens, Kew, included Professor W. G. Chaloner, Reader in Botany 1963-72 and currently an Honorary Research Fellow in Geology, Sir Leslie Fowden, Professor of Plant Chemistry 1964-74 and Fellow of the College, and Professor Elizabeth B. Robson, Galton Professor of Human Genetics. Professor W. L. Twining was appointed Chairman of the Commonwealth Law and Education Association. Mr Frank Dumlop, Fellow of the College, was appointed Director of the Edinburgh Festival.

The following were elected Fellows of the College in 1983-84:
Professor T. Barnard, Emeritus Professor of Micropalaeontology and former Head of the Department of Geology at UCL; Mr I. M. Campbell, President of the Institution of Civil Engineers and Vice-Chairman of British Rail with responsibility for engineering development; Dr Gertrude Caton-Thompson, Fellow of Newnham College; Mr C. V. Chester-Browne, Managing Director of the Design and Project Division of Vickers; Professor E. R. Huehns, Professor of Haematology and Head of the Department of Haematology at UCL; Sir Immanuel Jacobovits, Chief Rabbi of the United Congregations of the British Commonwealth; Dr A. J. Martin, General Manager (Exploration) of British Petroleum and a Fellow of the Institute of Petroleum and of the Geological Society; Dr Magnus Pyke, former Secretary and Chairman of Council of the British Association for the Advancement of Science; Mr L. Osman, artist-designer of buildings, furniture, tapestry and glass; and Professor B. R. Rabin, Professor of Biochemistry and Head of the Department of Biochemistry at UCL.

Elections to academies and learned societies included the election of Professor D. E. N. Davies to Fellowship of the Royal Society, and of Professor R. E. Allsop as a Fellow of the Institute of Highways and Transportation. Professor E. W. Handley was elected President of the Classical Association for 1984-85. Professor M. P. Barnes was elected a Full Member of the Gustav Adofs Akademien, Uppsala.

Honorary degrees and appointments were conferred on members or former members of the College as follows: the DSc of the University of Oxford on Emeritus Professor Sir Andrew Huxley who was also appointed Honorary Fellow of the Royal Society of Edinburgh; membership of the American Astronomical Society on Professor M. J. Seaton, who was also awarded an SERC Senior Research Fellowship tenable at UCL. The University of London conferred the honorary degree of DLitt on Emeritus Professor Sir William Coldstream, the honorary degree of LLD on Mr J. R. Stewart, formerly Principal of the University of London and Honorary Fellow of UCL, and the honorary degree of DSc(Econ) on

Dr Taslim O. Elias, President of the International Court of Justice and Fellow of the College.

Other notable honours included: the award of the Royal Medal of the Royal Society to Emeritus Professor A. L. Cullen in recognition of his many distinguished contributions to microwave engineering, both theoretical and experimental, and in particular for research on microwave antennae; Professor Cullen was also awarded the Faraday Medal by the Institution of Electrical Engineers; Professor E. A. Ash was awarded the 10th Marconi International Fellowship in Communication; Professor P. N. Rowe was elected to a Fellowship of the City and Guilds of London Institute; Sir James Lighthill was awarded an engraved gold ring at the Royal Aeronautical Society's Headquaters, German aviation's highest award, for his work on fluid mechanics; Professor R. Browning, Honorary Research Fellow in the Department of Greek, was awarded the Cross of the Commander of the Order of the Phoenix for his services to the history of the Greek language; Professor R. J. H. Clark was awarded the 1983-84 Tilden Lectureship and Medal by the Royal Society of Chemistry; Professor M. J. Seaton was awarded the Guthrie Medal and Prize of the Institute of Physics; Dr A. G. Gilbert was awarded the Gill Memorial Award of the Royal Geographical Society for his contribution to Latin American geography; Mr N. B. Harte was appointed Director of the Pasold Research Fund for textile history, based at the London School of Economics; Dr Monte Shapiro was invited to give the first Monte Shapiro Lecture at the conference of the British Psychological Society held at the University of Warwick in March 1984; Dr H. D. Clout was awarded a Doctorat de l'universite of the Universityof Paris.

APPOINTMENTS

The following professorial appointments have been made during the session: Professor D. W. Pearce came from the University of Aberdeen to take up the Chair of Political Economy and was also appointed Head of the Department of Political Economy, Professor J. N Coldstream, Professor of Aegean Archaeology at Bedford College, was appointed to the Yates Chair of Classical Archaeology. The Chair of Medical Microbiology was filled by the appointment of Professor J. R. Pattison from King's College Hospital Medical School, who has also become Head of the Joint Department of Medical Microbiology. Professor S. Greenbaum, Professor of English at the University of Wisconsin, was appointed to the Quain Chair of English Language and Literature. With the transfer of the Department of Dutch at Bedford College to UCL the Chair of Dutch Language and Literature held by Professor R. P. Meijer was also transferred. Professor W. Sims, who held the conferred title of Professor of Microbiology in Relation to Dentistry at the Institute of Dental Surgery, joined the Dental School at UCL. The University subsequently approved the establishment of a Chair of Microbiology in Relation to Dentistry at UCL and Professor Sims was appointed to the Chair. Professor T. H. Lambert, Professor of Mechanical Engineering and Head of the Department, was appointed to the vacant Kennedy Chair of Mechanical Engineering.

A Readership in European Community Law was established by the University as part of an academic initiative awarded to the College and Mr J. A. Usher, Senior Lecturer in the Department of Laws, was appointed to this new post. Under the restructuring of Geology provision within the University Dr J. T. Greensmith, Reader in Geology, transferred from Queen Mary College to UCL.

The following conferments of title of Professor were approved by the

University: Mr M. P. Barnes (Scandinavian Philology), Dr D. Colquhoun (Pharmacology), Dr W. D. Dover (Mechanical Engineering), Mr P. George (Fine Art), Dr Ted Honderich (Philosophy), Dr Annette Lavers (French), Dr D. H. Michael (Mathematics) and Dr A. G. Watson (Manuscript Studies).

The title of Reader was conferred upon the following: Dr J. B. Cawley (Clinical Haematology), Dr B. R. Clayton (Mechanical Engineering), Dr I. J. Dowman (Photogrammetry and Remote Sensing), Dr L. C. Gibilaro (Chemical Engineering), Dr A. G. Gilbert (Geography), Dr B. D. Gomperts (Biochemistry), Dr N. Harris (Development Planning), Dr J. E. Jayne (Mathematics), Dr A. B. Legon (Chemistry) and Dr Gillian E. Peach (Physics).

A number of appointments to Visiting Professorships were made during the session: Professor F. T. Banner, former Professor of Micropalaeontology at University College Swansea (Geology); M. R. Errera, a Judge of the Supreme Administrative Court of France (Laws); Dr A. H. Gabriel, Head of the Space and Astrophysics Division at the Rutherford Appleon Laboratory (Physics and Astronomy); Mr D. Hooper, Director of GEC Hirst Research Centre (Faculty of Engineering); Mr R. R. P. Jackson, Head of the DHSS Clinical Operational Research Unit at UCL (Statistical Science); Professor T. Jacobsen, Professor Emeritus at Harvard University (History); Dr S. R. C. Malin, Head of the Department of Astronomy and Navigation at the National Maritime Museum (Physics and Astronomy); Dr R. A. Rosner, Head of the Networks and Communications Department of the University of London Computer Centre (Computer Science); Professor A. J. Solnit, Director of the Child Study Centre at Yale University (Freud Memorial Visiting Professor of Psychoanalysis in the Department of Psychology); Mr D. T. Sugden, a Partner in Ove Arup Associates (Bartlett School of Architecture and Planning); and Dr P. M. Sutton, Director of the Public Health Laboratory Service Centre for Applied Microbiological Research at Porton Down (Biochemical Pathology).

In the course of the session the following new appointments to Headships of Departments were made: Dr P. C. Burnham (Anthropology); Professor J. M. Coldstream (Classical Archaeology); Professor M. A. Jones (History); Mrs Anna L. M. Lepschy (Italian); Professor A. G. Watson (School of Library, Archive and Information Studies); Professor J. R. Pattison (Medical Microbiology); Professor D. H. Jenkinson (Pharmacology); Professor M. V. Smith (Phonetics and Linguistics); Professor D. W. Pearce (Political Economy); and Professor A. G. Alexander was elected Dean of the Dental School.

Mr P. Vincent was appointed Acting Head of the Department of Dutch and Professor H. A. Brant Acting Head of the Department of Obstetrics and Gynaecology.

Professor J. W. Mullin was reappointed Vice-Provost for a further period of three years and Professor D. W. James's appointment as Vice-Provost was extended to the end of September 1984. Two new Deans were elected: Professor R. E. Allsop in the Faculty of Engineering and Professor N. F. Watson in the Faculty of Environmental Studies. Dr N. Harris was appointed Director of the Development Planning Unit in succession to Professor C. Rosser. Dr P. A. Wood took up appointment as School Liaison officer in succession to Dr J. W. Fox.

APPOINTMENT TO COUNCIL

Sir James Hamilton, formerly Permanent Under-Secretaryof State at the Department of Education and Science, was co-opted to serve as a member of Council for five years from October 1983.

RETIREMENTS

Professor I. R. Christies, Astor Professor of British History, retired in September 1984 after thirty-six years' service to the College. After war service in the RAF, he joined the History Department as an Assistant Lecturer in 1948, became successively Lecturer and Reader, and was appointed to a personal Chair in 1966 before succeeding to the Astor Professorship in 1979. Throughout his period of service his impact on teaching and research was considerable. He was an unusually successful lecturer and a devoted tutor and supervisor. Serving both as Head of the History Department (1975-79) and as Dean of the Faculty of Arts (1971-73) he also displayed exceptional gifts as an administrator. A series of distinguished monographs made him a leading authority on late eighteenth-century British politics, his best known works being *The End of North's Ministry, 1780-82* (1958), *Wilkes, Wyvill and Reform* (1962) and *Crisis of Empire: Great Britain and the American Colonies, 1754-1783* (1966). More recently, he wrote a highly successful textbook, *Wars and Revolutions, 1760-1815,* a volume in the Longman History of England series. Professor Christie was for a number of years a member of the Council of the Royal Historical Society and of its Literary Sub-Committee. He was elected a Fellow of the British Academy in 1977, and in 1984 was the Ford Lecturer in English History at Oxford. Though dedicated to research, he never failed to give priority to the affairs of the Department and the College, both of which are deeply indebted to him for his devoted service during a critical period in their history.

Dr D. A. W. Edwards has had a long association with the Medical School, first as a member of Dr E. E. (now Sir Edward) Pochin's Clinical Research Unit and later, when that unit was disbanded, as Reader in Gastroenterology in the Department of Surgery. He is a senior member of the MRC external staff and has established an oesophageal clinic with an international reputation. Dr Edwards's work has been essentially clincial research in the complex problems of oesophageal disease and he has described some hitherto unrecognised syndromes. His contributions have led to improved methods of treatment and it seems likely that his many scientific contributions will continue to be essential reading for all those engaged in the treatment of patients with oesophageal disease.

Professor G. V. Groves retired from the Department of Physics and Astronomy in January 1984. He joined the teaching staff of the then Department of Physics in 1956 as a Lecturer, having previously been seconded for two years as a research assistant by the Ministry of Supply. He was one of the earlier members of the rocket research group under the leadership of Dr (later professor, now Sir Robert) Boyd. The work was then centred around the use of high altitude rockets equipped with instruments to investigate the upper atmosphere. Later on he branched out on his own in order to concentrate on computational studies of atmospheric tides and other properties of the atmosphere as deduced from both rocket and satellite data. He was one of those involved in the production of the first International Reference Atmosphere. He was a conscientious teacher and in addition to normal undergraduate teaching duties, was for many years responsible for both the organisation and teaching of a Diploma course in Space Science in the Department.

Although formally retired, his research into the atmosphere in the Department is continuing unabated, under the sponsorship of both the US Air Force Office of Scientific Research and the US National Research Council.

Professor K. O. Kemp retired on 30 September 1984 after 15 years as Chadwick Professor and Head of the Department of Civil and Municipal Engineering. He had previously been on the staff of the Department since 1953 as Lecturer and Reader. A former student of the Department, Ken Kemp graduated with first-class Honours, gaining the Chadwick Gold Medal and Prize, in the immediate post-war years of the Department's return from evacuation in Wales. After graduation, he served for some time in the Colonial Survey in the Federation of Rhodesia, being responsible for the early stages of the massive Kariba Dam, which impounds the Zambesi River. Later he returned to London to work for Collins and Mason, Consulting Structural Engineers (Collins was also the Chadwick Professor at the time.) In this capacity he was responsible for the desig of some of the College reconstruction. Ken Kemp also designe dhte covered footbridge connecting the North Cloister to the Lonsdale Building. Since joining the teaching staff in 1953 he has contributed in many ways to the activities of the College, notably as Dean of the Faculty of Engineering, Senior Treasurer to the Students' Union and as Chairman of the Student Accommodation Committee. He was also frequently sought for professional duties outside the College, for example, on structural engineering collapse enquiries and on educational matters for Engineering Institutions. As this is an early retirement, it can be expected that Ken Kemp will continue as a vigorous Emeritus Professor for very many years.

Miraculously backing the Land Rover out of Foster Court, locked in the Lankester Theatre with the Zoology second year and an hour to spend on the *Crossopterygii,* or making an erudite point in staff meetings, Professor K. A. Kermack, who retired in September 1984, had long been a familiar colleague in Zoology. As primarily a field scientist news of his research and teaching in Welsh quarries or on the west coast of Scotland reached most of us only at secondhand. Kermack will be remembered mainly for his distinguished work on the origin of mammals, while his contributions with students and colleagues embraced a wide area of vertebrate palaeontology. In the continuing effort to keep biology in the College in time with modern ideas his unflagging support and wise guidance will be remembered with gratitude; he was a colleague who viewed his own brand of science with the confidence and optimism which enabled him to deal generously with developments at large.

Professor Desmond Laurence, who retired at the end of the session, qualified in Medicine at St Thomas's Hospital in 1945. After serving in the New Zealand army in Japan, he held junior posts at St Thomas's Hospital, then as Senior Lecturer in Therapeutics in the Medical School. In 1954 he moved to a joint appointment as Senior Lecturer at University College Hospital Medical School Medical Unit and UCL Department of Pharmacology. He was created Reader in 1960 and Professor of Pharmacology and Therapeutics in 1964. Professor Laurence has played a leading role in the development of Clinical Pharmacology in the UK and overseas. His main research interests have been in cardiovascular drugs and experimental and clinical tetanus. He published widely and was a prolific writer of books. He was author of *the* standard work on Clinical Pharmacology which is now in its 25th year and has been translated into various foreign languages, and the Chinese version is about to appear in Beijing. His eminence is international and numerous

overseas research workers have studied in his department. A leading authority on drug regulation and the ethics of medical research, he has lectured widely throughout the world and has fulfilled many roles on behalf of the World Health Organisation in all regions of the developing world. He has served on numerous committees of leading scientific bodies, often as Chairman, exercising his lucid mind to formulate a conclusion to diffuse discussion. Professor Laurence will be remembered by generations of students an dstaff in both Clinical Pharmacology and Pharmacology for his lectures and tutorials, where he so often had a phrase combining wit and perspicacity to elucidate an otherwise difficult or dull point. He has qualities that will be impossible to emulate and so the new Head of the Department of Clinical Pharmacology is intending to bring a new meaning to the word 'emeritus' at UCL in order that we, and indeed many elsewhere, can go on benefiting from Professor Laurence's skills for many years to come.

Professor Raphael Loewe, MC, joined the College in 1961, after a distinguished career at the Universities of Cambridge and Leeds, becoming a Reader in 1970 and Goldsmid Professor of Hebrew and Jewish Studies in 1982. Among his abundant contributions to the appreciation of Hebrew literature, from the Bible down to the Middle Ages, he is probably best known for his sensitive English translations of the intricate and allusive Hebrew poetry of medieval Spain and for his compositions and translations into Hebrew verse. His interests reflect the wealth of Hebrew literature and the many contacts of Jewry with the classical, Christian and Islamic worlds; the history of the cross-bow, intrigues in Charles II's court, and medieval treatments for renal calculus, are among the countless topics that he has illuminated through his penetrating use of Hebrew courses. He will be missed by his colleagues for his tact, loyalty and administrative skill, by his students for his unfailing fairness and his rigorous and always constructive criticism, but by all, and above all, for the breadth and depth of his scholarhsip. Over a hundred friends and admirers attended a dinner to mark his retirement, and many more contributed to a prize in his name, for students who make outstanding progress in the Department of Hebrew and Jewish Studies. Fortunately he has agreed to teach for a further year on a part-time basis.

Professor R. O'Neil graduated from the Turner Dental School, Manchester, in 1948 before taking up a career in Oral and Maxillofacial Surgery. He qualified in Medicine at the Westminster Hospital Medical School and was appointed Consultant Dental Surgeon to the Seamen's Group of Hospitals in 1960 and Consultant Dental Surgeon to Guy's Hospital in 1961. In 1967 he left the National Health Service on his appointment in the University of London as Reader in Oral Surgery at University College Hospital Dental School. The title of Professor of Oral Surgery was conferred on him in 1972. Raymond O'Neil has had a distinguished career in the field of Oral Surgery, not only as a leading oral surgeon but also in his clinical research into facial pain. He is currently the President of the British Association of Oral and Maxillofacial Surgery, a singular honour in this, his retirement year. He continues until February 1985 as a Special Lecturer in Oral and Maxillofacial Surgery.

Professor A. D. G. Smart retired in September 1984. Before joining the College in 1975, as Professor of Urban Planning, he pursued a distinguished career in local government. This led to his appointment as County Planning Officer for Hampshire (1963-75), where he pioneered the introduction of structure planning. He was a member of both the Professional Advisory Group, which examined the

future of development plans (1964-65), and the Skeffington Committee, which investigated the need for public participation in the planning process. Between 1975 and 1980 he was head of the Bartlett School of Architecture and Planning. During this period he sought to promote greater understanding of the workings of land markets, and of the complexitie sof project planning, design and implementation. He also undertook research into the problem sof multi-agency decision-making in rural areas, and the exercise of planning control over underground development and storage. He was a member of the Working Party which studied the alternative uses of historic buildings on behalf of the British Tourist Authority and Historic Buildings Council (1979-81). More recently he has chaired the Examination in Public of three structure plan reviews on behalf of the Department of the Environment. The College has likewise benefited greatly from his professional expertise and enthusiastic attempts to enhance the general appearance and environment of the UCL Front Quadrangle, including the 'completion of the Gower Street Gap'. It is envisaged that he will continue to participate in the School's growing programme of planning research. In addition, he will play a leading role in the development of a joint research programme with the Graduate School of Environmental Studies in the Seoul National University.

Professor K. W. Swart graduated from the University of Leiden and, after teaching at a number of universities in the United States, joined the staff of the History Department in 1967 as Professor of Dutch History and Institutions. He excelled as a teacher of modern European history, more particularly the Revolt of the Netherlands, on which he offered an extremely popular Special Subject. He also played a leading part in the seminar on Modern European History at the Institute of Historical Research. In a long research career Professor Swart has made contributions to a wide range of topics including the sale of offices in the eighteenth century (the subject of his first published book) and nineteenth century French intellectual history. For a number of years he has undertaken the time-consuming task of compiling the annual survey of historical writings in the Low Countries. He is best known, however, for his many writings on William the Silent and the Revolt of the Netherlands. These have gained him a high reputation alike in this country, his native Holland and Germany. His full-scale biography of William the Silent is well advanced and its publication will be eagerly awaited.

Professor C. A. Vernon joined the College as an undergraduate in 1941. After five years of war service at the Armaments Research Centre, he returned to the Chemistry Department to work for a PhD degree with Professor C. K. Ingold and Dr E. D. Hughes. He was appointed to the staff as a Lecturer in 1950, became a Reader in 1962, a Professor in 1967 and was elected a Fellow of the College in 1979. Although originally trained as a physical organic chemist, Professor Vernon became progressively more interested in biochemical and biological areas of research, causing him eventually to take an MSc in Physiology in 1964. He was one of the very first to apply chemical principles to the interpretation of the detailed mechanism of specific enzyme catalysis and later made comprehensive structural, biochemical and pharmacological studies on a diversity of biological important peptides and proteins. In so doing, he introduced a new area of exciting, topical and productive research in to the Chemistry Department. These unique interests permitted him, together with Professor (now Sir) James Black from the Pharmacology department, to introduce the current degree course in Medicinal Chemistry in 1974. Charles Vernon was not only an original and innovative

scientist but was an inspiring teacher and stimulated many students in Chemistry to become interested in the application of their subject to biological problems. His friends and colleagues note with pleasure his appointment now as Emeritus Professor and look forward to his continuing companionship and involvement in the life and work of the Department.

Mr R. S. Craig, who retired in September 1984, joined the College in 1966 after a successful career in the City. A skilful lecturer and a tutor of rare sympathy and dedication, Mr Craig was for a number of years the senior teacher in the Economic History section of the History Department, bearing overall responsibility for the history component of the BSc(Econ) degree and maintaining a vital link with the Department of Political Economy. He became a Senior Lecturer in Economic History in 1980. Mr Craig pioneered the study of British maritime history in the College and wrote extensively on shipping, shipowning and shipbuilding, more particularly in South Wales, the south west of England and the maritime provinces of Canada. He founded and edited a new learned periodical, *Maritime History,* and also launched the important Channel Islands Maritime History project, now nearing completion. He reached a wider audience with two polished and lucid books, *Steam Tramps and Cargo Liners, 1850* and *The British Seafarer,* the latter written in conjunction with a successful BBC radio programme. Mr Craig's genial presence and well-stocked mind will be greatly missed.

Mr C. E. Gimson, Senior Tutor for the past two years and Tutor and Sub-Dean of the Faculty of Engineering for five years, retired in September 1984. After taking the London External degree of BSc(Eng) at Nottingham in 1940, he contributed to the needs of the time by working on heavy electrical plant and then aircraft production for the English Electric Company, and later in the RAF as a Flight Commander responsible for power supplies. After a period teaching at Nottingham University, during which he obtained the MSc(Eng) degree, he joined the College as a Lecturer in 1953 and became a Senior Lecturer in 1961. In addition to his valuable teaching on electrical power and machines, and later on power electronics, he soon became active in tutorial and examining work in the University as well as the College. His work as Departmental Tutor in Electrical Engineering led to his being given special responsibility in 1972 as Assistant Faculty Tutor for the introduction in the Engineering Faculty of the Course Unit system, and in turn to his appointment as Faculty Tutor. Known affectionately by all his colleagues as 'Jim', he will be remembered for a rare combination of correctness, imperturbability, gentle humour, and warm concern for students and colleagues. His appointment as Senior Tutor was a fitting recognition to his qualities by the College at large.

Dr H. Heath retired in September 1984 as Reader in Biochemical Pathology (originally Chemical Pathology) in the Faculty of Clinical Sciences. He joined the Department in 1947 as a BDH Research fellow, subsequently holding a Rockefeller Fellowship in Philadelphia, USA; by 1953 he had achieved both the chemical- and bio-synthesis of ergothioneine. He lost his sight in 1957 due to bilateral retinal detachment and was awarded a three-year fellowship. He chose to work on diabetes. Ability was recognised, the fellowship renewed, and in 1966 he was re-established as Senior Lecturer in the Department. Throughout the 1960s and 1970s he energetically and enthusiastically directed a productive research group supported by the MRC and a number of pharmaceutical companies, gaining an international reputation in the field of diabetic retinopathy and formulating a

widely accepted hypothesis to explain the underlying mechanisms of the disorder. Dr Heath is very active in the RNIB, serving on its Executive Council and currently as Chairman of its Prevention of Blindness Sub-Committee. He is also involved in the development of a Talking Terminal to permit the use of microcomputers by blind people and intends to continue these activities.

Dr Don Roodyn of the Department of Biochemistry retired during the 1983-84 session on the grounds of ill health. He was appointed Lecturer in 1963 and promoted Reader in 1969. He will be remembered by many generations of students for his sympathetic understanding. During the periods he held office as Departmental Tutor (1973-79) and Assistant Faculty Tutor (1979-83). He had a distinguished scientific career with an international reputation in the field of mitochondial biogenesis: in these studies he was the first to demonstrate that the organelle has an intrinsic protein-synthesising system. He was widely known to biochemists around the world for his excellent work as Editor of *Sub-Cellular Biochemistry,* an important international review journal.

Peter Wason, Reader in Psycholinguistics since 1970, has retired after 30 years' association with the College. Originally a specialist in English literature, in which he lectured at the University of Aberdeen, Peter Wason brought to psychology a powerful combination of perceptive insight and logical rigour. As director of the Psycholinguistic Research Unit he bemused and enthused his students and colleagues over a number of years with puzzles whose blatant simplicity was inexplicably belied by the impossibility of solving them. Both on his own and in conjunction with his student, Phil Johnson-Laird, Peter has produced a string of influential books and articles on thinking and the psychology of reasoning which have brought renown to the department, the College and British psychology. It is greatly to be hoped that as Reader Emeritus Peter will continue to give the College the benefit of his friendship, urbanity and accumulated wisdom for many years to come.

Professor Patricia H. Clarke, Professor of Microbial Biochemistry in the Department of Biochemistry, has retired after 31 years in the College. Professor Clarke graduated from Cambridge and held posts in the Ministry of Supply, industry and the Medical Research Council before coming to UCL. She was one of the early pioneers in the field of molecular genetics and her distinguished accomplishments were recognised by her election as Fellow of the Royal Society in 1976 and her appointment as Vice-President of the Society for 1981-88. One of the earliest workers in the field of molecular biology at UCL, her long-standing interests in the industrial application of molecular biology have been a major factor in establishing UCL's present pre-eminence in biotechnology. A gifted lecturer and dedicated teacher, her deep concern for the welfare of students will be appreciatively remembered by many former students.

Mrs Wendy P. Bourne, Senior Assistant Registrar and Head of the Department of Student Administration within the Registrar's Division, took early retirement and so ended almost 31 years' of loyal service to the College. Her immense talent for organisation, her intuition, commonsense and good humour will be sorely missed. Liss Parish Council, for whom she now works on a part-time basis, has been lucky to acquire such a competent Clerk.

Mr L. E. (Laurie) Bryett retired in 1984 after 30 years' service to the College. A Chartered Surveyor by profession, he was appointed Assistant Bursar in 1954 having previously worked in private practice and spent four years in the Royal

Engineers. He was appointed Deputy Bursar in 1965 and became Acting Bursar in 1972 during the early negotiation on the UC/RF Redevelopment Project. In addition to his extensive knowledge of the College linked to considerable skill in his chosen profession, he added a sound knowledge of the law of property. He supervised all aspects of the Bursar's Department with particular responsibility for property management. It is hoped that his expertise in this field will be available to the College for some time and he has agreed to continue as Chairman of AFSIL. Laurie's knowledge and skill will be greatly missed as well as his personal qualities which earned him the friendship of so many colleagues throughout his long period of service.

Mrs Elvina Foster took early retirement after thirty-nine years' service in the College administration. She first joined UCL in 1945, and her potential soon being recognised, was moved to the Records Office. She then had a spell at SOAS, returning to UCL as Records Officer in 1975. Her skills in recruitment and training transformed the Records Office into the efficient service which we now have. Her long experience and background knowledge of the College proved invaluable to countless administrators, and to researchers both from home and abroad; she had a fund of historical information and gave unstintingly to all who asked.

Mr Arthur Godman retired in September 1984, having worked for a year after his official (early) retirement. Although his last three years with UCL were served as Assistant Systems Manager within the Systems Management Unit, he first came to the site from local government service at the beginning of 1971 as Accountant to the University College Medical School, transferring to the College as Assistant Finance Officer in April 1980 on the reunification of the two institutions. His responsible approach to the worklife at UCL will be greatly missed by his colleagues and the many members of staff to whom he has given his time so willingly over the years.

RESIGNATIONS

Professor R. H. T. Edwards, who resigned with effect from 30 September 1984 to take up the Chair of Medicine at the University of Liverpool, graduated in Medicine at the Middlesex Hospital Medical School in 1964 having previously gained a first-class Honours degree in Physiology. His resident clinical appointments were at The Middlesex National Heart and Hammersmith Hospitals. Having gained Membership of the Royal College of Physicians in 1966, he embarked upon ten years of clinical research at Hammersmith Hospital and was awarded the PhD for his studies in exercise physiology in 1969. As a Wellcome Foundation Swedish Fellow he studied human muscle biochemistry at The Karolinska Institute, Stockholm in 1970, and from 1971-76 he was a Wellcome Senior Research fellow engaged in studies of human muscle weakness and fatigue. In 1976 he was elected to the Fellowship of the Royal Colelge of Physicians. In the same year Professor Edwards was appointed to the Chair of Human Metabolism, and to the Headship of that Department, at UCHMS and became Director of the Charles Dent Metabolic Unit at UCH. In 1982 the Department of Human Metabolism and the Metabolic Unit in the Faculty of Clinical Sciences (the successor to UCHMS) were joined together to form the single Department of Medicine and Professor Edwards was appointed Head of the new Department. During his time as Head he has striven to develop closer links between the Department of Medicine and those

Departments most closely allied to Medicine in the Faculty, Clinical Pharmacology, Community Medicine, General Practice and Geriatric Medicine. Professor Edwards's research investigations have concentrated upon the functions and repair of human muscle in health and disease.

Eric Walter Handley, immediately on graduating from Trinity College, Cambridge, joined the staff of the Departments of Latin and Greek at UCL as Assistant Lecturer in October 1946 at the age of nineteen. With a quiet self-confidence devoid of arrogance that has been an unfailing mark of his method of approach he taught students of redoubtable maturity, some of whom were literally twice his age. His pupils have always testified to an unsurpassable tutorial technique with penetrating criticism accompanied by kindly encouragement. As a young scholar he worked on special problems of Greek language and literature, where his critical acumen received the acclaim of distinguished scholars in Britain and abroad. His edition of Menander's comedy *The Dyskolos* (1965) is accepted as a major work of critical and humane scholarship. He has also developed in collaboration with colleagues in the Greek Department and in the Faculty of Science new techniques for handling papyri. Promoted to Reader in 1961, he received a personal chair in Greek and Latin in 1967. In the following year he became Head of the Department of Greek, a position that he combined with the Directorship of the Institute of Classical Studies. He was elected Fellow of the British Academy in 1969 and has been its Foreign Secretary since 1979. He was awarded a CBE in 1983. Eric Handley has always been generous of time devoted to other scholars' work in progress. He brings limitless enthusiasm to whatever he applies himself to, and this quality has widened the experience of colleagues and students alike. It is fitting that he returns to his old university and college as Regius Professor of Greek.

David Henderson was appointed to a Chair of Political Economy at UCL in 1974. He previously had a distinguished career at the World Bank in Washington, contributing to major publications and reports and being the sole author of a study of India's energy sector. His inaugural lecture in UCL has been described as one of the most memorable by an economist, being a rigorous and highly critical appraisal of major investments in nuclear power and in Concorde in the UK. It subsequently formed the basis for broadcasts which in turn were published. David Henderson always maintained an active interest and participation in the working of government and his elevation to one of the most prestigious international government positions, Head of the Economics Division of the OECD in Paris, in January 1984 could have been anticipated. It is also a reflection of the standing of David Henderson in both the academic and 'government' communities.

Professor F. G. B. Millar resigned at the end of the session to take up the Camden Chair of Ancient History at Oxford. After graduating from Oxford he held fellowships there, first at All Souls', then at Queen's, before joining UCL in 1976 as Professor of Ancient History. Professor Millar had already made a considerable reputation as historian of Ancient Rome, and this he proceeded to enhance with *The Emperor in the Roman World* (1977), a massive work of scholarship now in its second edition, and his editorship for a number of years of *Journal of Roman Studies.* That Ancient History at London has continued to flourish, even expand, at a time when classical studies generally are experiencing great difficulties has been due in large part to Professor millar's energy, enthusiasm and devotion. During his tenure of the Chair the number of students reading Ancient History has

grown significantly, as has the number of degree courses with an Ancient Hisotry component. At the same time Professor Millar's leadership of the weekly graduate seminar at the Institute of Classical Studies has confirmed and extended London's position as the country's leading centre of research in Ancient History. Professor Millar enjoyed the confidence and affection of staff and students alike and succeeded in instilling into the Ancient History sub-department a remarkable *esprit de corps,* which was much in evidence at Professor Millar's farewell party. His departure is a severe loss to the Department and the College.

Professor Colin Rosser resigned in the autumn of 1983 as Professor of Development Planning and Director of the Development Planning Unit within the Bartlett School of Architecture and Planning. He has taken up appointment as first Director of the recently established United Nations sponsored International Centre for Integrated Mountain Development at Kathmandu in Nepal. Professor Rosser graduated in anthropology from the University of Cambridge and undertook research in the Western Himalayas. He subsequently taught at the School of Oriental and African Studies (with a further research period in Nepal) and the University College of Wales at Swansea. Between 1962 and 1969, he worked with the Calcutta Metropolitan Planning Organisation, and then with the Ford Foundation, latterly in Indonesia (1970-76). He joined UCL in 1976, and, as director of the Development Planning Unit, guided a process of substantial expansion in the work of the Unit. His enormous energy and enthusiasm as well as great sympathy as a teacher and wide knowledge of the field were crucial in this process of expansion, and culminated in the successful winning by the College of a contract with the Government of Indonesia, funded by the World Bank, to set up two Master's programmes at the Institute of Technology Bandung. From August 1982, Professor Rosser was on leave from the College to act as team leader for the Bandung project.

Professor M. A. Screech resigned from the Fieldon Chair of French Language and Literature which he had occupied since 1971 and the Headship of the Department on being elected to a Senior Research Fellowship at All Souls' College. He graduated from UCL in 1950 after a course interrupted by the war, where he served in intelligence and acquired an abiding interest in the Japanese language and culture. He obtained a DLitt from Birmingham University where he taught for ten years, coming back to the College as Reader in 1961 then becoming a Professor by conferment of title in 1966. It was while in College that he began, in association with Professor D. P. Walker and other illustrious scholars of the Warburg Institute, the work on Rabelais which has made his name a byword for expertise, insight and reappraisal in this field. This priority does not mean that he is a one-author man: he has published on the greatest names in Renaissance literature: Erasmus, Marot, Du Bellay, Montaigne. A riveting lecturer and a writer whose books can also be enjoyed by the layman, he has always done his utmost to secure for his colleagues the conditions which encourage the progress of their own work. A Visiting Professor much in demand in France and on the American continent, he obtained the ultimate accolade from those working in his favourite field in the summer of 1984 when he was President of the International Rabelais Colloquium at Tours, receiving the freedom of the city. A Fellow of the British Academy, a London DLit and a Chevalier de l'Ordre du Merite, his becoming a Fellow of the College in 1982 is perhaps the most relevant fact at present, ensuring as it does that our relations with him will not be severed.

David Ulph came to the Department of Political Economy in 1978, securing rapid promotion to Reader in 1982. In April 1984 he was appointed Professor of Economics at Bristol University. He has written extensively in the fields of taxation and labour supply, industrial economics and the world oil market. In 1983 he was made Assistant Editor of the *Review of Economic Studies,* one of the most prestigious journals in economic theory, and a Fellow of the Centre for Economic Policy Research in London. David Ulph has contributed substantially to UCL's Department of Political Economy.

Dr Michael Gilsenan resigned from a Readership in Social Anthropology in January 1984 following his appointment to the Khalid bin Abdullah Al Saud Chair for the Study of the Contemporary Arab World at Magdalen College, Oxford. Dr Gilsenan carried out his undergraduate and postgraduate studies in Oriental Studies (Arabic) and Social Anthropology at Oxford from 1960 to 1967 and had held academic posts at Harvard University, the University of California at Los Angeles, and Manchester University before joining the College as a Lecturer in 1973. Widely known for his publications on Islam and Middle Eastern societies (particularly *Saint and Sufi in Modern Egypt* and *Recognizing Islam*), Mike Gilsenan has been a very popular teacher at UCL, and he has also been actively involved in academic exchanges with universities in France, the USA and the Arab world. At the time of his appointment to the Oxford Chair, he was serving as Acting Head of the Anthropology Department, and his presence there will be sorely missed.

Dr Derek C. Imrie, Reader in Physics, resigned his post in September 1984, in order to take up an appointment as Head of the Department of Applied Physics at Brunel University. After being successively undergraduate, postgraduate and ICI Fellow in the Department of Physics,he spent two years as Research Fellow at Harvard, where he collaborated with Professor R. Wilson in a series of experiments on electron-photon scattering. He returned to the Department as Lecturer in 1968 and was appointed a Reader in 1981. He played a continuously very active and leading role in many of the elementary particle physics experiments performed by a group from the Department, utilising facilities available at the Rutherford Laboratory and CERN. At various times he has served on many national and international committees connected with the organisation of elementary particle physics. Particular mention should be made of his enthusiasm for teaching and his exceptional abilities in this field. For three years he taught courses on elementary particle scattering theory at the annual National Summer School for Young High Energy Physicists at the Rutherford Laboratory. He has on many occasions served the Department particularly well as Admissions Tutor and as Organiser of its annual 6th Form Conference.

Dr O. C. J. Lippold, Reader in the Department of Physiology, was appointed to the staff in 1946 after qualifying in medicine at UCH. He was a particularly kind and concerned Tutor to Medical Students and Sub-Dean in the Faculty of Medical Sciences (1955-61). An innovative and enthusiastic teacher, he has so far written and edited three textbooks on different aspects of Physiology. His original research has been in two main fields, skeletal muscle and neurophysiology, as witnessed by more than forty full papers, several reviews and monographs on the Alpha Rhythms and Neurophysiology of the Cerebral Cortex. He is currently compiling, in collaboration with his daughter, Dr Barbara Ogdell of the Department of Physiology at Glasgow University, a new textbook under the provisional title *Physiology: The Essentials in Diagrams.* Dr Lippold will be Professor and Head of the

Department of Physiology, comprising the Bedford College Physiology department and the sub-department of the Royal Holloway College, at Egham.

Wilf Cruddas who left in September 1984 to take up an appointment at the University of Hong Kong began his College career in May 1970 as General Assistant to the Secretary, becoming Principal Administrative Assistant in October 1983. On the restructuring of the Central Administration in 1978 Wilf was appointed Services Officer in the General Division and in January 1981 joined the Registrar's Division as Senior Assistant Registrar (Student Finance). During his time here Wilf was very active in AUT circles and indeed served as President and Honorary Secretary of the local branch. The College will miss Wilf's meticulous attention to detail and his splendid contribution to the efficiency of our Committees.

OBITUARY

We record with regret the death during the year of a number of members and former members of the College.

Emeritus Professor Stephen Bosanquet died in Cambridge on 10 January 1984 at the age of 80. He studied Mathematics at Oxford under the guidance of G. H. Hardy and obtained his DPhil in 1929. He was awarded the DSc in 1935. His teaching career of 42 years was spent at UCL, as a Lecturer from 1929, as a Reader from 1936 and as a Professor from 1966 until 1971 when he retired. He remained a member of the Mathematics Department as an Honorary Research Fellow. He was an international expert on the theory of series and published over sixty research papers on this field. He was an outstandingly successful research supervisor; many of his former students are professors in this country or abroad. He also helped and encouraged a great many mathematicians through the critical but sympathetic and constructive way he acted as a referee. He served for twelve years on the Council of the London Mathematical Society and was editor of its Journal for nine years. He was responsible, during G. H. Hardy's illness and after his death, for seeing Hardy's great book *Divergent Series* through the press; later he was one of the editors for Hardy's Collected Works, in seven large volumes, being chief editor for the last two volumes. He was an extremely generous mathematician always striving to help and encourage his students to develop and sharpen their ideas. He will be much missed.

George Dawson held the second Chair of Physiology from its establishment in 1966 until he retired in 1979. He had previously spent a period at UCL on secondment from the MRC. He was already recognised world-wide for his work in neurology and for the introduction of new electronic techniques. He patiently persuaded UCL of the value of modern methods of data acquisition, first special purpose digital data processors, and then minicomputers. He resisted to the utmost those who would keep computers centralised and surrounded in mystery. With the coming of microprocessors, he and his students carried out feasibility studies on the various types, and after his retirement he gave his time unstintingly to help introduce microcomputers into teaching and research. As a teacher of neurophysiology at the undergraduate level he never lost sight of the overall aim of explaining the working of the brain. He made great contributions to the postgraduate teaching of the Department, as postgraduate adviser and as supervisor to numerous PhD students. George's greatest ability as a teacher was in explaining electronic circuitry without the use of 'heavy Symbolism'. He hated

committees, and those which could not be ignored he tolerated. He believed that the best way to get a job done was to find the right person and give them a free hand. He spoke scathingly of the many distractions which took university teachers away from teaching and research. George had a great sense of fun which was never far from the surface. He also had a humility which made him see perhaps too clearly the greatness of others, and not enough of his own.

Emeritus Professor Thorold Dickinson came to University College in 1960, the first person in this country to hold an academic post in Film Studies. This came about because the then Slade Professor, Sir William Coldstream, was also at the time Chairman of the British Film Institute: he offered the hospitality of the Slade to what was to be a small research unit in film, funded for the first five years by money from the film industry. The UGC took over the funding in 1965, and the Slade Film Unit under Thorold's direction became an integral part of College. Before coming to Slade, Thorold had been one of the most distinguished directors in English cinema, likely perhaps to be best remembered for his polished versio of *Queen of Spades* (1948), with Edith Evans in her first role in sound film. From 1956-60 he had directed the Film Section of the United Nations Office of Public Information, and he brought with him to the Slade a healthily cosmopolitan view as well as his unquenchable zest for film. Those were the high, wide and handsome days of expansion and Thorold perfectly suited the role. Many colleagues will remember with pleasure and affection the enthusiasm with which he set about making University College film-conscious. Staff and students from many departments actually queued to find a place in the Physics Theatre for the three-times-a-week regular Slade programme at which A. J. P. Taylor gave a series of lectures illustrated with films. Thorold devised programmes for the Departments of French, German, Spanish and Italian, even (from United Nations films) for the Laws Department. He was above all a superb showman and he took the opportunity of giving College a feast of the medium he loved. He retired in 1971 at the age of 67, saddened a little already by the wave of academicism which overtook film studies during the 70s. Film, he always thought, was for making and showing, not for theorising about. His memory will be treasured not only by colleagues at UCL but also by students who enjoyed his generous regime, and have gone on to edit, photograph, direct and write about films in many countries.

Kenneth Garside died on 1 December 1983 suddenly, yet peacefully, in his own home. Even before he left the Army in 1945 he had already been appointed Deputy Librarian of University College Library. Here he devised a new scheme of classification to arrange the Library's book collections in the manner which best fitted the teaching and research of the College. It became known as the Garside classification and was adopted, in whole or in part, in many libraries including Glasgow University Library and the Library of Congress of the USA. He also drew up detailed plans for a new library, extending the present Donaldson Library eastwards, and embodying beneath, as functional bookstacks, the present Upper Hall and Lower Refectory, again, with extensions eastwards. This Library was planned to house over one million volumes and seat over a thousand readers. It would have been a great library. For five years he was Commanding Officer of the OTC and for twelve years he was Honorary Secretary to the Council of Military Education Committees of the UK. From 1958 until 1974 he was Librarian of King's College in the Strand, where he saw the realisation of his planning for a new Library when the first stage was opened in 1971. In 1974 he was appointed

Goldsmiths' Librarian and Director of Central Library Services in the University of London.

Many members of College, past and present, will have learned with great sadness of the sudden death of Professor Denys Holland, on 6 August 1984 at the age of 61, in Athens. Denys, as he always preferred to be known, had a very long and distinguished career at College, spanning twenty-five years. After reading law at Cambridge, his original appointment at UCL was as Assistant Lecturer in Law in 1948, being successively Lecturer, Reader in English Law and Professor of Law in 1966. In 1972, he resigned with his wife, Winifred, who was a Lecturer in Law, when they both left for London, Ontario, to take up Chairs of Law at the University of Western Ontario in Canada. A whole generation of undergraduate law students at UCL will look back with affection on those first-year lectures in constitutional law, which Denys gave with great lucidity and wit and which made the study of law the most entertaining and stimulating of disciplines. His keen analytical mind gave him a facility to master any legal topic with rapidity, so that, often at very short notice, he would be called upon to teach a wide range of legal subjects which he did by concentrating on the main principles clearly and concisely. His main area of academic interest was British constitutional and administrative law but he also took a great interest both in constitutional and political problems of the new Commonwealth countries, where he had lasting friendships and influence both at government and university level. Although his publications were not numerous, he wrote in a lucid and penetrating style and his articles show a remarkable prescience in identifying many of the major developments which have occurred in constitutional and administrative law and politics both in the United Kingdom and the Commonwealth. For many years Sub-Dean and Tutor in the Faculty of Laws, he will be remembered as a teacher, counsellor, and friend by a whole generation of students from England and the Commonwealth. He never failed to exert himself for everyone who needed his help, from whatever background, or whether students in the Law Department or members of the College. Many must be forever indebted to him for his unselfish help and advice which he extended so generously. His sociability and humour were qualities much appreciated by his colleagues and many friends in the College community. His interest and care for students encouraged him to accept the appointment as first Dean of Students in 1968, and it is a tribute to his tact and sound commonsense that College passed through those turbulent student years relatively free from strife and dissension. That pastoral care for students was given further opportunity on his appointment as the first Warden of Ifor Evans Hall and subsequently of Max Rayne as well, where his consideration for the welfare of students helped to foster a friendly and collegiate spirit among all the students who lived in those Halls. Denys was a great teacher in the oral tradition; he always gave the best of himself but was ever ready to efface himself so as to bring out the best in his students. He was a man of integrity, who taught his students to respect the truth, to think logically, to argue cogently and to treat each and every person with respect and consideration. His influence will continue to be felt and he will be remembered with great affection by those who had the pleasure and privilege to have been taught by him or to have been associated with him in College. He will be greatly missed by his former colleagues and his many students and friends throughout the United Kingdom and the Commonwealth.

Emeritus Professor Sir Harrie Massey who joined the College in 1938, died on

27 November 1983. After an initial spell as Goldsmid Professor of Applied Mathematics, interrupted by the rendering of particularly distinguished scientific services during the war, he was appointed Quain Professor of Physics and Head of the Department of Physics in 1950. It is entirely to his credit that the present Department of Physics and Astronomy came into being as such and has since become a leading department in both these fields. Most of the current research in the Department came into being as a result of his direct initiative. He was largely instrumental in initiating a national space research programme, in which the College is participating strongly. He played a significant part in the conception of the Rutherford Laboratory, and later the Rutherford-Appleton Laboratory, through which essentially all of the particle physic and much of the space research of the UK is channelled. Sir Harrie was an atomic physicist by predilection. He made many important contributions to his subject, particularly in the field of the theory of atomic collisions. The interactions of positrons fascinated him particularly and he continued to give close theoretical guidance to the positronics research group in the Department after his retirement in 1975. He was elected Fellow of the Royal Society in 1940, awarded the Hughes Medal in 1955, the Royal Medal in 1958 and was Vice-President and Physical Secretary during 1969-78. Knighted in 1960 he was honoured in numerous other ways. All his colleagues were his friends and owe a great debt to his memory. The Department will sorely miss his wise advice and help.

The death of Emeritus Professor H. O. Schild occurred on 15 June, 1984. Born in 1906, in Fiume, Austria (now Rijeka, Yugoslavia), he qualified in medicine at Munich in 1932. A period in W. Staub's Institute of Pharmacology confirmed his interest in basic medical science, and opened the way to work with Sir Henry Dale in the National Institute for Medical Research in Hampstead. His association with UCL began in 1937 when J. H. Gaddum invited him to join the Department of Pharmacology, where he remained until his retirement in 1973, having become Head of Department in 1961. He played a full part in College and University affairs, serving terms as Dean of the College Faculty of Medical Sciences, and Chairman of the Board of Studies in Pharmacology. He also instituted the highly successful BSc degree in Pharmacology. His scientific achievements were outstanding. One was to introduce the rigorous approach to analytical bio-assay that is now fundamental to pharmacology. Another concerned the quantitation of drug antagonism; the powerful yet readily applicable methods he introduced provided a sound basis for the classification of receptors, and of drugs that act on them. This has had far-reaching applications. For example, his work on the characterisation of histamine receptors led directly to the development of the H_2-receptor-blocking drugs. Other important contributions included studies of delayed hypersensitivity, the actions of receptors on smooth muscle, and the clinical assessment of drugs acting on the uterus. He became a Fellow of the Royal Society in 1966, and received many honours, including the award of the Wellcome Gold Medal of the British Pharmacological Society in 1981. Retirement in 1973 provided the opportunity to spend some months each year working on the application of basic pharmacology to new drug development at Sandoz in Basle, and the subsequent decision of Sandoz to site the Sandoz Institute London at UCL must have been influenced by the success of this collaboration. He also continued to teach in the Department and to prepare new editions of his excellent textbook on Applied Pharmacology. All who were privileged to work with him learned to

respect his logical mind, his calm, tolerant and unaffected personality, and his concern for the well-being of his subject and the Department, and the people within it. He will be remembered with deep affection.

A memorial Service was held on 26 October 1983 in the University Church of Christ the King for Emeritus Professor Sir Eric Turner, Honorary Fellow of the College, Emeritus Professor of Papyrology and Founder-Director of the Institute of Classical Studies, who died on 20 April 1983. The Address was given by Professor E. W. Handley. [*See* Annual Report for 1977-78, p.27.]

PUBLICATIONS* AND EXHIBITIONS

BY MEMBERS OF COLLEGE DEPARTMENTS
1 AUGUST 1983 — 31 JULY 1984

FACULTY OF ARTS

ANTHROPOLOGY

BURNHAM, P. C. (with Christensen, T.), Karnu's message and the 'War of the Hoe Handle': interpreting a central African resistance movement. *Africa,* 53 (1983), 3-22.

GLEDHILL, J. E., The transformation of Asiatic formations: the case of late prehispanic mesoamerica. *Marxist Perspectives in Archaeology,* ed. M. Spriggs. Cambridge University Press, 1984, 135-48.

HOMEWOOD, KATHERINE M., RODGERS, W. A., Pastoralist ecology in Ngorongoro Conservation Area, Tanzania. *Pastoral Development Network 17(d),* London: Overseas Development Institute, 1984, 1-27.

HUMPHREYS, SARAH C., *Anthropology and the Greeks.* London: Routledge and Kegan Paul, 1983. 1 + 182 pp.

The evolution of legal process in Attica. *Tria Corda. Scritti in onore di Arnaldo Momigliano,* Como: New Press, 1983, 229-56.

Fustel de Coulanges and the Greek 'genos'. *Sociologia del Diritto* 8 (1983), 35-44.

The date of Hagnias' death. *Classical Philology,* 78 (1983), 219-25.

History and anthropology. *History Today,* 34 (1984), 47-8.

LAST, D. M., From Sultanate to Caliphate: Kano ca. 1450-1800. *Studies in the History of Kano,* ed. B. M. Barkindo. Ibadan: Heinemann, 1983, 67-91.

MARTIN R. D. (with Brand, H. M.), The relationship between female urinary oestrogen excretion and mating behaviour in cotton-topped tamarins, *Saguinus oedipus oedipus. Int. J. primatol.,* 4 (1983), 275-90.

Commentary on Blumenburg: The evolution of the advanced homonid brain. *Curr. Anthrop.* 24 (1983), 606-7.

Scaling effects and adaptive strategies in mammalian lactation. *Symp. Zool. Soc. Lond.,* 51 (1984), 87-117.

MILLER, D. 'Malwa' and 'Jorwe' in the Chalcolithic of India. *South Asian Archaeology 1981,* ed. B. Allchin. Cambridge University Press, 1984, 213-20.

Ideology, power and prehistory: an introduction. *Ideology, Power and Prehistory,* ed. D. Miller and C. Tilley. Cambridge University Press, 1984, 1-16.

Modernism and suburbia as material ideology. *Ibid.,* 37-49.

Things ain't what they used to be. Special issue on material culture. *Royal Anthropological Institute Newsletter,* 59 (1983), 5-7.

RICHARDS, P., Ecological change and the politics of African land use. *African Studies Rev.,* 26 (1983), 1-72.

Quantity and quality in agricultural work: Sierra Leone rice farming systems. *Energy and effort,* ed. G. A. Harrison. London: Taylor & Francis, 1983, 209-28.

Farming systems and agrarian change in West Africa. *Progr. Hum. Geogr.,* 7 (1983), 1-39.

*The expression 'publications' includes all forms of medium, provided the item is generally available to the public and is a work of original scholarship or research.

ROWLANDS, M. J., Objectivity and subjectivity in archaeology. *Marxist Perspectives in Archaeology,* ed. M. Spriggs. Cambridge University Press, 1984, 108-14.

Material culture studies at University College London. Special issue on material culture. *Royal Anthropological Institute Newsletter,* 59 (1983), 15-16.

CLASSICAL ARCHAEOLOGY

COLDSTREAM, J. N., The meaning of the regional styles in the eighth century B.C. *The Greek Renaissance of the Eighth Century B.C.: Tradition and Innovation. Proc. 2nd Int. Symp. Swedish Inst. Athens, 1-5 June, 1981,* ed. R. Hägg. Stockholm: Swedish Institute in Athens, 1983, 17-25.

Gift exchange in the eighth century B.C. *Ibid.,* 201-7.

Some problems of eighth-century pottery in the West, seen from the Greek angle. *La céramique grecque ou de tradition grecque au VIIIe siècle en Italie centrale et meridionale,* ed. M. Cébeillac-Gervasoni. Naples: Centre Jean Bérard, 1983, 21-37.

Some pecularities of the Euboean Geometric figured style. *Annuario Scuola Arch. di Atene,* 59 (1983), 241-9.

(with Huxley, G. L.), The Minoans of Kythera. *The Minoan Thalassocracy, Myth and Reality. Proc. 3rd Int. Symp., Swedish Inst. Athens, 31 May - 5 June, 1982,* ed. R. Hägg and N. Marinatos. Stockholm: Swedish Institute in Athens, 1984, 107-12.

JOHNSTON, A. W., The extent and use of literacy; the archaeological evidence. *The Greek Renaissance of the Eighth Century B.C.: Tradition and Innovation. Proc. 2nd Int. Symp. Swedish Inst. Athens, 1-5 June, 1981,* ed. R. Hägg. Stockholm: Swedish Institute in Athens, 1983, 65-8.

Contribution no. 56 to *Riv. di Epig. Etrus. St. Etruschi,* L (1982), 302.

Corinthian and Laconian Pottery. *Not. Scav. Ant.,* 1977 Suppl. (1983), 317-21.

Hechekleides? *Zeit. für Pap. und. Epig.,* 54 (1984), 115-17.

DUTCH

FENOULHET, J. K., *Dutch in Three Months.* London: Hugo's Language Books, 1983. 190 pp.

HERMANS, T. J., Leonard Nolens. *Kritisch Literatuur Lexicon,* ed. A. Zuiderent et al. Groningen: Wolters-Noordhoff, 1984, 1-11.

Werkelijkheid kent grens noch schaarste. Kroniek van de poëzie. *Neerlandica extra muros,* 41 (1983), 57-61.

Minderheid of minderwaardigheid? Het Vlaamse literaire boek en het oog van de Nederlandse kritiek. *Ibid.,* 42 (1984), 3-16.

De hielen van de tijd. Kroniek van de poëzie. *Ibid.,* 42 (1984), 27-31.

(with Montuori, A.), Editors, Hans Lodeizen, Oratio pro domo'. *Dutch Crossing,* 20 (1983), 7-27.

(with Montuori, A.), Editors, Hans Lodeizen, 'De duivel en de avonturier'. *Dutch Crossing,* 21 (1983), 3-28.

MEIJER, R. P., Een raadsel binnen een geheim. *Over Cees Nooteboom,* ed. D. Cartens. Den Hag: BZZTôH, 1984, 162-4.

Verdriet, wraak en gekte. Kroniek van het proza. *Neerlandica extra muros,* 42 (1984), 23-6.

Hugo Claus, 'Dukacita Belgia'. *Serba Serbi Negeri Belanda,* 55 (1984), 37-9.

EGYPTOLOGY

ADA,S. B. G., *The Koptos Lions.* Milwaukee: Milwaukee Public Museum, 1984, 32 pp.

CAMINOS, R. A., Epigraphic work at Wadi el-Shatt el-Rigal. *J. Egyptian Arch.,* 69 (1983), 3-4.

Ancient Egyptian Mummy Bandages in Madrid. *Homenaje al Prof. Martin Almagro Basch,* IV. Madrid: 1983, 223-31, 2 pls., 2 figs.

HALL, R., The oldest surviving *'b3* 3sceptre. *Göttinger Miszellen,* 64 (1983), 25-31, 1 pl.

HANKEY, V., The ceramic tradition in Late Bronze Age Cyprus. *Report of the Department of Antiquities, Cyprus* (1983), 168-71.

JANSSEN, J., El-Amarna as a residential city. *Bibliotecha Orientalis,* 40 (1983), 273-88.

JEFFREYS, D. G., SMITH H. S., (with Malek, J.), The Survey of Memphis 1981. *J. Egyptian Arch.,* 69 (1983), 30-42.

MARTIN, G. T., A Royal Scarab from Hala Sultan Tekke. *Hala Sultan Tekke,* vol. 8, ed. P. Åstrom and others. Goteborg: 1983, 247-8.

The Tomb of Tia and Tia: preliminary report on the Saqqâra excavations, 1982. *J. Egyptian Arch.,* 69 (1983), 25-9.

Recent discoveries of New Kingdom date in the Memphite Necropolis. *J. Soc. Study of Egyptian Antiquities,* 13 (1983), 44-7.

Current research for higher degrees in Egyptology, coptic and related studies in the United Kingdom, no. 5. *J. Egyptian Arch.,* 69 (1983), 166-7.

SETON-WILLIAMS, M. V., *El Amarna.* London: Privately published, 1983. 56 pp., 16 figs.

SMITH, IL1H. S., Saqqâra, Nekropolen, Spätzeit. *Lexikon der Ägyptologie,* Lieferung 35, ed. W. Helck and W. Westendorf. Wiesbaden: Otto Harrassowitz, 1983, 412-27.

Contributions to Segal, J. B., *Aramaic Texts from North Saqqâra.* London: Egypt Exploration Society, 1983. (Acknowledged on title page.)

Raymond O. Faulkner. *J. Egyptian Arch.* 69 (1983), 141-4 (obit.)

(with Jeffreys, D. G., Malek, J.), The Survey of Memphis 1981. *J. Egyptian Arch,* 69 (1983), 30-42.

(with Tait, W. J.), *Saqqâra Demotic Papyri I.* London: Egypt Exploration Society, 1983. 225 pp., 17 pls.

(with Tait, W. J.), A proposal to undertake tax administration for a district official. *Enchoria,* 12 (1984).

TUFNELL, O., *Studies on Scarab Seals,* vol. II. Warminster: Aris and Phillips, 1984. 220 pp., 200 pls.

Jericho scarabs and seal impressions. *Jericho,* V, ed. K. Kenyon and T. A. Holland. Oxford University Press, 1983, 766-9.

Some gold bird ornaments, Falcon or Wryneck? *Anatolian Studies,* XXXIII (1983), 57-66, 2 pls.

UPHILL, E. P. (with Dyke, P. J.), Major Charles Kerr Macdonald. *J. Egyptian Arch.,* 69 (1983), 165-6.

ENGLISH LANGUAGE AND LITERATURE

ASHTON, ROSEMARY, *George Eliot.* Oxford University Press, 1983. 105 pp.

The search for liberty: German exiles in England in the 1850s. *J. Europ. Studies, xiii* (1983), 187-98.

DANIELL, D. J., Introduction. John Buchan, *Memory Hold-the-Door.* London: Dent, 1984, v-xvii.

Shakespeare. *The Year's Work in English Studies,* vol. 62, ed. Laurel Brake. London: John Murray for the English Association, 1984, 164-201.

Recent trends in English acting: or young actors are always with us. *Drama and the Actor, Themes in Drama,* 6, ed. James Redmond. Cambridge University Press, 1984, 179-98.
Buchan and the popular literature of imperialism. *Literature and Imperialism,* ed. Bart Moore-Gilbert. London: Roehampton Institute, 1984, 118-34.
Associate Editor, *The Year's Work in English Studies,* 1984.

DODGSON, J. MCN., General Editor, *Domesday Book: Dorset.* Chichester: Phillimore, 1983.
Domesday Book: Kent. Chichester: Phillimore, 1983.

FENDER, S., *American Literature in Context, 1620-1830,* London: Methuen, 1983. vii + 209 pp.
Retrospective revolutions. *The Third Dimension,* ed. Philip French. London: The Stourton Press, 1983, 84-91.
A highbrow fortnightly that makes money. *The Listener,* (12 January 1984), 5-6.
Keeping close to the Earth. *Times Lit. Suppl.* 4228 (13 April 1984), 391-2.

GREENBAUM, S., Corpus analysis and elicitation tests. *Corpus linguistics: recent developments in the use of computer corpora in English language research,* ed. J. Aarts and W. Meijs. Amsterdam: Rodopi, 1984, 193-201.

HARRIS, F., Homer — The Odyssey, translated by Walter Shewring with an epilogue on translation, introduced by G. S. Kirk. *Agenda* 21, No. 3 (1983), 44-54.

HAYWOOD, I., Thackeray, Mary Berry, and *The Four Georges. Notes and Queries,* 30 (1983), 229.
The making of history: literary forgery and historiography in the Eighteenth Century. *Literature and History,* 9 (1983), 139-51.

MASON, M. Y., A new Browning poem. *Times Lit. Suppl.* (27 April 1984), 453.

MILLER, K., Editor, *The London Review of Books,* vol. 5, No. 12 to vol. 6, No. 12. London: 1983-84.

PALMER, C. ELIZABETH (with Collins, Marie) Old English literature. *The Year's Work in English Studies,* vol. 62, ed. Laurel Brake. London: John Muray for the English Association, 1984, 85-107.

RENNIE, N., *The Cargo.* London: TNR Productions, 1983. 27 pp.

TROTTER, D., *The Making of the Reader. Language and Subjectivity in Modern American, English and Irish Poetry.* London: Macmillan, 1984. 272 pp.
Circulation, interchange, stoppage: Dickens and social process. *The Changing World of Charles Dickens,* ed. Robert Giddings. London: Vision, 1983, 163-79.

WEIS, R. J. A., *Caesar's Revenge:* a neglected Elizabethan source of *Antony and Cleopatra. Shakespeare Jahrbuch (West)* (1983), 178-86.

SLADE SCHOOL OF FINE ART

AIKEN, JOHN, Group exhibition. The Sculpture Show, Hayward Gallery, London, August-October 1983.
Solo exhibition. Oliver Dowling Gallery, Dublin, April-May 1984.
Group exhibitions. Belfast, Limerick and Dublin, Spring 1984.

BRISLEY, STUART, Solo exhibitions. Sculpture Museum, Marl, West Germany, November 1983.
Kunst Museum, Dusseldorf, West Falischer Kunsterein, November 1983.
Koln Kunsterein, November 1983.
Group exhibitions. The New Art. Tate Gallery, London, September/October 1983.
Nordic Winter Arts Symposium, Geilo, Norway, April/May 1984.

Dogwork. Interim Arts, London, April/May 1984.
Recent acquisitions. British Council, Arts Council, July 1984.
The North. Tate Gallery, London, 1984.

BRISLEY, STUART (with McMullen, Ken), Film. *Being and Doing.* Edinburgh Festival, 1984.

CAMP, JEFFREY, Tolly Cobbold Travelling Exhibition, 1983.
Solo exhibition. Browse and Darby Gallery, London, 1984.

CAMP, JEFFREY, COLDSTREAM, SIR WILLIAM, GEORGE, PATRICK, GOWING, SIR LAWRENCE, UGLOW, EUAN, The Hard Won Image exhibition. Tate Gallery, London, 1984.

COLDSTREAM, SIR WILLIAM, Solo exhibition. Anthony D'Offay Gallery, London, June/July 1984.

DAGLISH, PETER, Solo exhibition of lithographs. The Western front Gallery, Vancouver, B.C., January 1984.
Group exhibitions. Chelsea Box Prints. London: Angela Flowers Gallery, January 1984.
8th British International Print Biennale. Cartwright Hall, Bradford, April 1984.
Print Making — Making Prints. The Atkinson Art Gallery, Southport, May 1984.
(with Walker, Richard), 2 Man exhibition of prints. Minskys Gallery, London, July 1984.

DOS SANTOS, BARTO, Solo exhibitions, Galeria III, Lisbon, December 1983; Galeria Zen, Oporto, February 1984; Galeria Kreth D'Orey, Heidelberg, May 1984.
Mixed exhibitions, Print Making — Making Prints. The Atkinson Art Gallery, Southport, May 1984; Labyrinth — Gulbenkian Foundation. Lisbon, July 1984.
Contribution to *Blake the Poet.* A programme for the Open University by D. Bideman.

GEORGE, PATRICK, Solo exhibition. Browse and Darby Gallery, London, 1984.

GEORGIADIS, NIKOS, Three productions at the Paris National Opera: Raymonda, November 1983; Dos Concertantes, June 1984; The Tempest, April 1984.

GOWING, SIR LAWRENCE, Royal Academy Summer Show, June-August 1984.
Introduction. *The Bible and its Painters* by Bruce Bernard. London: Orbis, 1983.
Introduction to catalogue for an Exhibition of Work by David Begbie. London: The Brompton Gallery, 1984.
Reviews of the following: K. Clark, *The Art of Humanism. Sunday Telegraph* (13 November 1983).
Art Books Roundup. Sunday Telegraph (11 December 1983).
Art Books Roundup. Sunday Telegraph (17 June 1984).
Collection of recent books on Raphael. *London Review of Books* (March 1984).
Diary (English Romanesque Exhibition, Hayward Gallery). *Ibid.* 9April/May 1984).
Caravaggio. Times Lit.Suppl. (March 1984).
Genius of Venis. London Review of Books (February 1984).
Television programme on *Three Painters — Masaccio, Vermeer, Cezanne.* BBC2 (April/May 1984).

HILLER, SUSAN, Solo exhibitions. Vivianne Esders Gallery, Paris; Orchard Gallery, Londonderry; Third Eye Centre, Glasgow; Gimpel Fils Gallery, London. *My Muse My Sister, Susan Hiller 1973-83.* Londonderry: Orchard Gallery.

HUGHES, MALCOLM, Group exhibitions, Arbeitskreis Exhibition and Symposium, Kemi Taidemuseo Art Gallery, Finland, August 1983.
Constructivist Tendencies in Europe. Galerie Konstruktin Tendens, Stockholm, Sweden, May 1984.

JARAY, TESS, Solo exhibitions. 10 Paintings 1980-84. Whitworth Art Gallery, Manchester, April 1984.

Prints and Drawings. 1964-84. Ashmolean Museum, Oxford, May 1984.
Arts Council Collection Acquisitions, 1979-83. Serpentine Gallery.

LEVERETT, DAVID, Group exhibitions. *Cavellino Artisto.* Cirrus Gallery, Los Angeles, 1983.
Europaische Biennale, Baden Baden, 1983.
Out of Print. Southill Park Art Centre, 1983.
Working Project on Site. Greek Islands, 1984.
E.V.A. Retrospective. Limerick, Dublin, Belfast, 1984.
One of a Kind. Maryland Institute, Baltimore, 1984.
1984 Group Show. Curwen Gallery, London.
One Man exhibition. Gallery III, Lisbon, 1984.

McFADYON, JOCK, Solo exhibition. Blond Fin Art Gallery, October 1983.
Scottish printmaking. Royal Scottish Academy, August 1983.
53-83 Three Decades of Artists. Royal Academy, October 1983.
The Music Show. Thumb Gallery, December 1983.
Artist as Film-maker. National Film Theatre, January 1984.
International contemporary Art Fair, Barbican, February 1984.
Whitechapel Open. Bishopsgate Institue, January 1984.
Bradford International print Biennale, April-July 1984 and on tour.
Masks. Cafe Gallery, May 1984.
Dogworks. Interim Arts, London, April 1984.
Playing live. Losely Gallery, Leicester, May 1984.
20th century Watercolours, Victoria and Albert Museum, March 1984.
Playing Live Catalogue by Robert Ayres (with illustrations). Leicester City Council, May 1984.
Cover illustration for *Acme Prospectus.* London: Acme Housing Association, March 1984.
Artist as film-maker catalogue. London: Arts Council, January 1984.

MOON, MICK, Solo exhibition. Waddington Galleries, London, December 1983.

REGO, PAULA, Solo exhibitions. Arnolfini Gallery, Bristol, September 1983; South Hill Park Art Centre, Bracknell, January 1984; Midland Group, Nottingham, June 1984.

UGLOW, EUAN, Solo exhibition. Browse and Darby Gallery, 1983.

FRENCH LANGUAGE AND LITERATURE

BAKER, FELICITY, Singing and the song: a note on Barthes and Callas. *Paragraph,* 3 (April 1984), 83-93.

CALDER, RUTH, Montaigne, *Des Boyteux* and the question of causality. *Bibliothèque d'Humanisme et Renaissance,* xlv (1983), 445-60.

JOHN, SHIRLEY E., 'Literary and philosophical elements in *Les Liaisons dangereuses:* The case of Merteuil'. *French Studies,* xxxviii (April 1984), 159-69.

LAVERS, ANNETTE, Rethinking history. *History and Theory,* xxii (1983), 328-34.
Collaboration to 'Bibliographic sémiotique II (Atlas)'. *Actes sémiotiques,* VII, 29, mars 1984.
Thinking to change the World. On Sartre. *Times Lit. Suppl.,* No. 4232 (11 May 1984), 511-12.
Review of Roland Barthes, *L'Obvie et l'obtus. French Studies,* xxxvii, (1983), 487.

SCREECH, M. A., Celio Calcagnini and Rabelaisian sympathy. *Neo-Latin and the Vernacular in Renaissance France,* ed. G. Castor and T. Cave. Oxford: Clarendon Press, 1984, 26-48.
Printers' helps — and fruitful errors. *Etudes de Lettres,* No. 2 *Rabelais.* Lausanne: 1984, 115-21.

Erasmus, Athens and Jerusalem. *Erasmus of Rotterdam Society Yearbook Three* (1983), 166-75.

STILL, JUDITH, from Eliot's 'Raw Bone' to Gyges' Ring: two studies in intertextuality. *Paragraph,* 1 (March 1983), 44-59.

Lucretia's silent rhetoric. *Oxford Lit. Rev.* 6 (1984), 70-86.

WOLEDGE, B., The problem of editing *Yvain. Medieval French Textual Studies in Memory of T. B. W. Reid.* London: 1984, 254-67.

WORTON, M. J., The catastrophe of translation: a reading of René Char's 'writing' of paintings. *Paragraph,* 2, 1-23.

Michel Tournier and a philosophy of the novel. *The Fiction Magazine,* 48-50.

Review of René Char, *Oeuvres complètes. French Studies,* xxxviii 232-4.

GEOGRAPHY

ADAMS, J. G. U., London's transport: subsidies are not the issue. *Town and Country Planning* (January 1983), 4-6.

Stop little pot. *Ibid.* (June 1983), 164-6.

For better or for worse. *Ibid.* (October 1983), 253-4.

An exam for Mr Ridley. *Ibid.* (December 1983), 336-7.

AGNEW, C. T., Checkland's soft systems approach — a methodology for geographers? *Area,* 16 (1984), 167-74.

BATTARBEE, R. W., Diatom analysis and the acidification of lakes. *Phil. Trans. R. Soc.,* B, 305 (1984), 451-77.

Diatom analysis of River Thames foreshore deposits exposed during the excavation of a Roman waterfront site at Pudding Lane, London. *Working Papers in Palaeoecology,* University College London, 2 (1983), 11 pp.

(with Meridinen, J., Hattunen, P.), Editors, *Palaeolimnology Developments in Hydrobiology,* 15. The Hague: Junk, 1983. 318 pp.

(with Oldfield, F., Dearing, J.), New approaches to recent environmental change. *Geogr. J.,* 149 (1983), 167-81.

(with Titcombe, C., Donnelly, K., Anderson, N. J.), An automated technique for the accurate positioning of sediment core sites and the bathymetric mapping of lake basins. *Hydrobiologia,* (1983), 71-4.

BROWN, E. H., Memorandum. *Remote Sensing and Digital Mapping 1st report of session 1983-84, House of Lords 98 II.* London: HMSO, 1984, 79-82.

Oral evidence. *Ibid.,* 61-78.

CAMPBELL, W. J., Statistical methods and the computer. *A Guide to Information Sources in the Geographical Sciences,* ed. S. Goddard. London: Croom Helm, 1983, 233-47.

CARTER, F. W., Praga e Sofia: Un'Analisi comparativa del cambiamento della loro struttura interna. *La Città Socialista: struttura spaziale e politica urbana.* Milano: Franco Angeli Editore, 1983, 514-44.

Pollution in Prague: environmental control in a centrally planned socialist country. *Cities,* 1 (1984), 258-73.

Eleventh century Poljica — an analysis of its historical geography. *The Cartulary of the Benedictine Abbey of St Peter of Gumay (Croatia) 1080-1187,* ed. E. Pivčević. Bristol: David Arthur, 1984, 23-37.

Medieval trade in the Western Balkans. *J. British-Yugoslav Soc.,* 3 (1984), 15-18.

CLOUT, H. D., *The Massif central* (2nd ed). Oxford University Press, 1983. 48 pp. *Nōson Chrigaku.* Tokyo: Taimeidō. 1983. 260 pp. (Translation of *Rural Geography.* Oxford: Pergamon, 1972).

Planungsstudien in ländlichen Räumen. *Die Landliche Siedlung als Forschungsgegenstand der Geographie,* ed. G. Henkel. Darmstadt: Wissenschaftliche Bucgesellschaft, 1983, 279-93.

COOKE, R. U., Stone movement on hillslopes in the Mojave desert, California: 16-year record. *Earth Surface Processes and Landforms,* 9 (1984), 365-70.

Decline and fall of the Los Angeles hills. *Bloomsbury Geographer,* 11 (1983), 1-15.

(with Goudie, A. S.), Salt weathering simulation — some comments. *Geografiska Annaler,* 65A (1983), 296-8.

DENNIS, R. J., Rethinking historical geography. *Progr. Human Geogr.,* 7 (1983), 587-94.

FLOWER, R. J., A comparative limnological study of Rathlin Island, Co. Antrim, with particular reference to diatoms. *Proc. R. Irish Acad.,* 82B (1982), 1-20.

The occurrence of an epiphytic diatom on *Microcyptis aeruginsa. irish Nat. J.* 20 (1982), 553-85.

Some effects of a small oil spill on the littoral community at Rathlin Island, Co. Antrim. *Irish Nat. J.,* 21 (1983), 117-20.

(with Dearing, J.), The magnetic susceptibility of sedimenting material trapped in Lough Neagh, Northern Ireland, and its erosional significance. *Limnol. Oceanogr.,* 27 (1982), 969-75.

FLOWER, R. J., BATTARBEE, R. W., Diatom evidence for recent acidification of two Scottish lochs. *Nature,* 305 (1983), 130-3.

Acid lakes in the Galloway Uplands, South-West Scotland: catchments, water quality and sediment characteristics. *Working Papers in Palaeoecology,* 6, University College London, (1984), 56 pp.

FRENCH, R. A., Man and the land — introduction. *Studies in Russian Historical Geography,* vol. 1, ed. R. A. French and James H. Bater. London: Academic Press, 1983, 13-21.

Russians and the forest. *Ibid.,* vol. 1, 23-44.

The introduction of the three-field agricultural system. *Ibid.,* vol. 1, 65-81.

The early and medieval Russian town. *Ibid.,* vol. 2, 249-77.

Canals in pre-revolutionary Russia. *Ibid.,* vol. 2, 451-81.

The urban network of later medieval Russia. *Geographical Studies on the Soviet Union: essays in honour of Chauncy D. Harris,* ed. G. J. Demko and R. J. Fuchs. Chicago: University of Chicago Dept. of Geography Research Paper 211, 1984, 29-51.

The changing Russian urban landscape. *Geography,* 68 (1983), 236-44.

Moscow — the socialist metropolis. *Metropolis 1890-1940,* ed. A. Sutcliffe. London: Mansell, 1984, 355-79.

(with Bater, James H.), Editors, *Studies in Russian Historical Geography,* 2 vols. London: Academic Press, 1983. 490 pp.

(with Bater, James H.), Approaches to the historical geography of Russia. *Studies in Russian Historical Geography,* vol. 1, ed. R. A. French and James H. Bater. London: Academic Press, 1983, 1-10.

(with Bater, James H.), Postscript: what is to be done? *Studies in Russian Historical Geography,* vol. 2, ed. R. A. French and James H. Bater. London: Academic Press, 1983, 483-90.

(with Diamond, D.), Guest editors, *Proceedings of the second Soviet-British seminar. Geoforum,* 15 (1984), 142 pp.

GILBERT, A. G., The tenants of self-help housing: choice and constraint in the housing markets of less developed countries. *Development and Change,* 14 (1983), 449-77.

Latin American studies. *Progr. Hum. Geogr.,* 7 (1983), 595-601.

Planning, invasions and land speculation. *Third World Planning Rev.,* 6, 3 (1984), 225-38.

HARRISON, C. M., Lowland heathland: the case for amenity land management. *Conservation in Perspective,* ed. A. Warren and F. B. Goldsmith. Chichester: Wiley, 1983, 71-82.

Recreational use of London's urban-fringe heaths: heathland management in amenity areas. *Cheltenham, Countryside Commission, CCP,* 159 (1983) 10.

Countryside recreation and London's urban fringe. *Trans. Inst. Br. Geogr.,* 8 (1983), 295-313.

Introductory texts in biogeography. *J. Higher Educ.,* 7 (1983), 151-63.

JACKSON, P. A., Ethnic turf: competition on the Canal Street divide. *New York Affiars,* 7 (1983), 149-58.

Principles and problems of participant observation. *Geografiska Annaler,* 65B (1983), 39-46.

Social geography: culture and capital. *Progr. Hum. Geogr.,* 8 (1984), 105-12.

(with Smith, S. J.), *Exploring Social Geography.* London: Allen and Unwin, 1984. 239 pp.

LOWENTHAL, D., An island is a world: the problem of Caribbean insularity. *Perspectives on Caribbean Regional Identity,* ed. Elizabeth Thomas-Hope. University of Liverpool, Centre for Latin American Studies, Monograph 11 (1984), 109-21.

Preserving the old, creating the new: conflict or synthesis? *Bloomsbury Geographer,* 12 (1984), 13-15.

MANNERS, G., Preface. *Regional Studies Association, Report of an Inquiry into Regional Problems in the United Kindom.* Norwich: Geobooks, 1983. 3 pp.

The role of coal in Community energy strategy. *House of Lords Select Committee on the European Communities, European Community Coal Policy, Session 1983-84, 10th Report.* London: HMSO, 1983, 205-22.

Introduction. *Administering Energy Saving: an evaluation of energy conservation programmes by European governments.* London: The Association for the Conservation of Energy, 1984, ii-viii.

North Sea oil: costs, benefits and uncertainties. *Geoforum,* 15 (1984), 57-64.

Future markets for the power supply business. *Modern Power Systems,* 4 (1984), 19-23.

(with Damesick, P., Cooke, P.) Regional industrial development policy. *House of Commons Committee on Welsh Affairs, The Impact of Regional Industrial Policy on Wales, Session 1983-84, Minutes of Evidence, Wednesday 22 February 1984.* London: HMSO, 1984, 51-76.

MEAD, W. R., The geographical distribution of orchards in early nineteenth century Finland. *Modern Geographical Trends,* ed. P. Pandey. New Delhi: Today and Tomorrow's Publishers, 1983, 371-8.

Autobiographical reflections in a geographical context. *The Practice of Geography,* ed. Anne Buttimer. London: Longmans, 1983, 44-61.

Norden: destiny and fortune. *Daedalus,* 113 (1984), 1-27.

MUNTON, R. J. C., Agriculture and conservation: what room for compromise? *Conservation in Perspective,* ed. B. Goldsmith and A. Warren. Chichester: Wiley, 1983, 353-73.

Green belt and land for housing. Memorandum of evidence submitted to the Environment Committee of the House of Commons. *Green Belt and Land for Housing,* 275-111, Vol. III, Appendix 9, London: HMSO, 1984, 560-7.

Resource management and conservation: the UK response to the World Conservation Strategy. *Progr. Hum. Geogr.,* 8 (1984), 120-6.

(with Goudie, A. S.) Review of British geography 1980-1984. *Geog. J.,* 150 (1984), 27-47.

NUNN, P. D., Late Cenozoic eustatic and tectonic changes around the island of St Helena and their relationship to the physical history of the coast of West Africa. *Association senegalaise pour l'etude du Quaternaire Africain, Bull. Liaison, Senegal,* 66-67 (1982), 59-70.
St Helena's ancient shores. *Geog. Mag.,* 55 (1983), 252-7.
The development of the River Thames in central London during the Flandrian. *Trans. Inst. Br. Geogr.,* n.s., 8 (1983), 187-213.
Occurrence and ages of low-level platforms and associated deposits on South Atlantic coasts: appraisal of evidence for regional Holocene high sea level. *Prog. Phys. Geog.,* 8 (1984), 32-60.
Review of evidence for Late Tertiary shorelines occurring on South Atlantic coasts. *Earth-Science Reviews,* 20 (1984), 185-210.
O'CONNOR, A. M., *The African City.* London: Hutchinson; New York: Holmes and Meier, 1983. 359 pp.
PATRICK, S. T., The calculation of per capita phosphorus outputs from detergents in the Lough Erne catchment. *Working Papers in Palaeoecology,* 4, University College London, (1983) 23 pp.
Phosphorus loss at sewage works in the Lough Erne region. *Ibid.,* 5 (1983), 33 pp.
The influence of industry on phosphorus loadings in the Lough Erne region. *Ibid.,* 7 (1984), 45 pp.
PRINCE, H., Landscape through painting. *Geography,* 69 (1984), 3-18.
RICHARDS, G. W., Molluscan zonation on rocky shores in Malta. *J. Conch.,* 31 (1983), 207-24.
SALT, J., Carrières et échanges de cervaux: un cadre explicatif pour les migrations internationales de travail au sein de l'Europe du nord-ouest. *Espace, Populations Sociétés,* 2 (1983), 27-38.
High level manpower movements in Northwest Europe. *Int. Migration Rev.,* 17 (1983/4), 633-52.
VITA-FINZI, C., First-order ^{14}C dating of Holocene molluscs. *Earth Planet. Sci. Lett.,* 65 (1983), 389-92.
(with Roberts, N.), Selective leaching of shells for ^{14}C dating. *Radiocarbon,* 26 (1984), 54-8.
WARD, P. M., Mexico: beyond sites and services. *Low-income Housing in the Developing World,* ed. G. K. Payne. Chichester: Wiley, 1984, 149-58.
WARREN, A., The problem sof desertification. *Sahara Desert,* ed. J. L. Cloudsley-Thompson. Oxford: Pergamon, for IUCN, 1984, 335-42.
Arid geomorphology. *Progr. Phys. Geogr.,* 7 (1983), 397-403; 8 (1984), 304-15.
The moving desert margins. *Geog. Mag.,* 56 (1984), 457-62.
Productivity, variability and sustainability as criteria of desertification. *Proc. EEC Conf. Desertification in Europe,* ed. N. Margaris. EEC, Brussels: Pantechi, 1984, 221-36.
(with Goldsmith, F. B.), Editors, *Conservation in Perspective.* Chichester: Wiley, 1983, 474 pp.
(with Goldsmith, F. B.), Conservation and the land. *Ibid.,* 19-39.
(with Goldsmith, F. B.), An introduction to nature conservation. *Ibid.,* 1-15.
WARREN, A., HARRISON, C. M., People and the ecosystem: biogeography as the study of ecosystems and culture. *Geoforum,* 209 (1984), 365-81.
(with Knott, P.), Desert dunes: a short review of needs in desert dune research and a recent study of micrometeorological dune-initiation mechanisms. *Eolian Sediments and Processes,* ed. M. E. Brookfield and I. S. Ahlbrandt. *Elsevier Developments in Sedimentology,* 38 (1983), 343-52.

WOOD, P. A., Industrial geography. *A Guide to Information Sources in the Geographical Sciences,* ed. S. Goddard. London: Croom Helm, 1983, 81-100.

The regional significance of manufacturing-service sector links: some thoughts on the revival of London's docklands. *Regional Diversification and Structural Change: Proc. Canada-United Kingdom Symp. on industrial Geography, Calgary, August 1983,* ed. B. M. Barr and N. M. Waters. Vancouver: Tantalus Research, 1984, 168-84.

GERMAN

FULBROOK, M., *Piety and Politics: Religion and the Rise of Absolutism in England, Württemberg and Prussia.* Cambridge University Press, 1983. 223 pp.

MCFARLAND, T. D. (with Ganz, P. F.), Editor, W. Schwarz, *Beiträge zur mittelalterlichen Literatur. Amsterdamer Publikationen zur Sprache und Literatur,* vol. 54. 1984, 104 pp.

STERN, J. P., *Hitler: The Führer and the People.* 2nd ed. (slightly revised). London: Flamingo/Collins, 1984; iv + 246 pp.

Introduction to: *Friedrich Nietzsche: Untimely meditations.* Transl. by R. J. Hollingdale, Cambridge University Press, 1983, 7-32.

'Reality' in early twentieth-century German literature. *Philosophy and Literature:* Royal Institute of Philosophy Lecture Series: 16, ed. A. Phillips Griffiths. Cambridge University Press, 1984, 41-57.

Relativity in and around *The Magic Mountain. The Novelist as Philosopher: Modern Fiction and the History of Ideas.* The Chichele Lectures, ed. Peregrine Horden. Oxford: 1983, 54-68.

In pursuit of the concrete. Review article a propos of *Georg Christopher Lichtenberg, Briefwechsel, Band I: 1765-1779,* ed. Ulrich Joost and Albrecht Schöne. *Times Lit. Suppl.* (7 October 1983), 1093.

Ardour. Review article on R. M. Rilke. *London Review of Books,* 3-16 November 1983.

Die 'Identitätskrise' der Deutschen. *Merkur,* Heft 4, Munich: Klett-Verlag, 1984, 58-63.

An honourable man. *Zu Heinrich Böll: Interpretationen,* ed. Anna Maria dell'Agli. Stuttgart: Ernst Klett Verlag, 1984, 101-5.

Introduction to *Coal-smoke and Englishmen: A Study of Verbal Caricature in the Writings of Heinrich Heine,* by S. S. Prawer. London: Institute of Germanic Studies 1984, ii-v.

SWALES, M. W. Entries on Doderer, Thomas Mann, Arthur Schnitzler in *The Fontana Biographical Dictionary of Modern Thought,* London: Fontana/Collins, 1983, 187, 480-1, 684.

Arthur Schnitzler's occasions: reflections on the *Tagebuch 1909-1912. GLL* 36 (1983), 318-22.

Hildesheimers *Marbot. Arbitrium,* 3 (1983), 318-22.

(with Swales, Erika), *Adalbert Stifter: A Critical Study,* Cambridge University Press, 1984. 251 pp.

GREEK

COCKLE, HELEN M., Editions of papyri (P.Oxy. 3531, 3550, 3552, 3595-3597). *The Oxyrhynchus Papyri,* vol. L, ed. P. J. Parsons, J.R. Rea and E. G. Turner. London: Egypt Exploration Society, 1983.

COCKLE, W. E. H., Editions of papyri (P.Oxy. 3524, 3553-3555, 3560, 3587, 3591-3592). *Ibid.*

Restoring and conserving papyri. *Bull. Inst. Classical Studies,* 30 (1983), 147-65.

Obituary of Sir Eric Turner. *U.C.L. Bulletin* 5,14 (1983), 17.

Review of M. Gigante (ed.), *Contributi alla storia della Officina dei Papiri Ercolanesi* (Quaderni della Biblioteca Nazionale di Napoli V,2 — Papiri Ercolanesi 3). *Classical Rev.,* 34 (1984), 153-4.

COLES, R. A. C., Editions of papyri (P.Oxy. 3536, 3563, 3568, 3571, 3581, 3590). *The Oxyrhynchus Papyri,* vol. L, ed. P. J. Parsons, J. R. Rea and E. G. Turner. London: Egypt Exploration Society, 1983.

International papyrological photographic archive: Cairo Mission, 1983. *Zeitschrift für Papyrologie und Epigraphik,* 52 (1983), 267-8.

The photographic archive 1980-1983. *Anagennesis,* 3 (1983), 147-8.

Reviews of the following: E. A. Judge, *Rank and Status in the World of the Caesars and St Paul. Ancient Society (Macquarie),* 13.1 (1983), 66-7.

J. David Thomas, *The Epistrategos in Ptolemaic and Roman Egypt,* 2: *The Roman Epistrategos. Classical Rev.,* 34 (1984), 93-4.

HANDLEY, E. W., Editions of papyri (P.Oxy. 3534, 3540). *The Oxyrhynchus Papyri,* vol. L, ed. P. J. Parsons, J. R. Rea and E. G. Turner. London: Egypt Exploration Society, 1983.

Obituary notices of Sir Eric Turner. *The Times* (22 April 1983); *Union Academique Internationale: compte rendu de la 57eme session* (1983), 10-11.

HOOKER, J. T., Minoan religion in the Late Palace period. *Minoan Society,* ed. O. Krzyszkowska and L. Nixon. Bristol Classical Press, 1983, 137-42.

The Homeric dialect. *Proc. 16th Eirene Conf.* III, ed. P. Oliva and A. Frolíková. Prague: Czechoslovak Academy of Sciences, 1983, 75-9.

Review of the following: A. Heubeck, *Schrift. Indogermanische Forschungen,* 87 (1982), 304-8.

J. Strange, *Caphtor/Keftiu. J. Hellenic Studies,* 103 (1983), 216.

HORSFALL, N. M., *Tabulae Iliacae* in the Collection Froehner, Paris. *J. Hellenic Studies,* 103 (1983), 144-7.

The origins of the illustrated book. *Aegyptus,* 63 (1983), 199-216.

Review of William M. Calder III, *Ulrich von Wilamowitz-Moellendorf, Selected Correspondence. Classical Rev.,* 34 (1984), 158.

MAEHLER, H. G. T., *Pindarus, pars I: Epinicia* (7th ed. revised). Leipzig: Teubner, 1984. xi + 192 pp.

Editions of papyri (P.Oxy. 3582-3586, 3600). *The Oxyrhynchus Papyri,* vol. L, ed. P. J. Parsons, J. R. Rea and E. G. Turner. London: Egypt Exploration Society, 1983.

Die griechische Schule im ptolemäischen Ägypten. *Egypt and the Hellenistic World* (*Studia Hellenistica* 27), ed. E. Van't Dack, P. van Dessel, W. van Gucht. Leuven: 1983, 191-203.

Fragmente aus Liebesromanen. *Im Reiche des Eros,* vol. II, ed. B. Kytzler. München: Artemis, 1983, 715-50.

Häuser und ihre Bewohner im Fayum in der Kaizerzeit. *Das römisch-byzantinische Ägypten,* ed. G. Grimm, H. Heinen and E. Winter (*Agyptiaca treverensia* vol. 2). Mainz: Zabern, 1983, 119-37 + pl. 32.

Egypt under the last Ptolemies. *Bull. Inst. Classical Studies,* 30 (1983), 1-16, pls 1-3.

Bemerkungen zu dem neuen Cicero-Fragment in Wien. *Zeitschrift für Papyrologie und Epigraphik,* 52 (1983), 57-9.

Obituary of Sir Eric G. Turner. *Gnomon,* 55 (1983), 574-5.

Review of K. A. Worp, *Das Aurelia Charite Archive. Classical Rev.,* 34 (1984), 116-8.

REA, J. R., Editions of papyri (P.Oxy. 3556, 3574-3580, 3588, 3589). *The Oxyrhynchus Papyri,* vol. L, ed. P. J. Parsons, J. R. Rea and E. G. Turner. London: Egypt Exploration Society, 1983.

Editions of papyri (P.Oxy. 3601-3646). *The Oxyrhynchus Papyri,* vol. LI, ed. P. J. Parsons and J. R. Rea. London: Egypt Exploration Society, 1984.
Proceedings before Q. Maecius Laetus, *praef. Aeg. J. Juristic Papyrology,* 19 (1983), 91-101.
Business letter: Melas to Dioscorus. *J. Egyptian Archaeol.,* 69 (1983), 138-40.

SHARPLES, R. W., Alexander of Aphrodisias, *Quaestiones* on Possibility, II. *Bull. Inst. Classical Studies,* 30 (1983), 99-110.
Knowledge and courage in Thucydides and Plato. *Liverpool Classical Monthly,* 7 (1983), 139-40.
On fire in Heraclitus and in Zeno of Citium. *Classical Quart.,* n.s., 24 (1984), 231-3.
Reviews of the following: R. Sorabji, *Necessity, Cause and Blame: Aspects of Aristotle's Theory. J. Hellenic Studies,* 103 (1983), 176-7.
M. Schofield and M. Nussbaum (ed.), *Language and Logos: Studies in ancient Greek philosophy presented to G. E. L. Owen. J. Hellenic Studies,* 103 (1983), 190-1.
(with Minter, D. W.), Theophrastus on fungi: some passages in Athenaeus. *J. Hellenic Studies,* 103 (1983), 154-6.

TURNER, SIR ERIC G. (the late), Editions of papyri (P.Oxy. 3532, 3533, 3541, 3593, 3594). *The Oxyrhynchus Papyri,* vol. L, ed. P. J. Parsons, J. R. Rea and E. G. Turner. London: Egypt Exploration Society, 1983.
Memoir of Edgar Lobel. *Gnomon,* 55 (1983), 275-80.
(with Fowler, D. H.), Hibeh Papyrus I 27: an early example of Greek arithmetical notation. *Historia Mathematica,* 10 (1983), 344-59.

HEBREW AND JEWISH STUDIES

FINESTEIN, JUDGE I., Religious minorities and civil rights in 19th century England. *Jewish Life and Times.* Winnipeg: Jewish Historical Society of Western Canada, 1983, 146-54.
Anglo-Jewry since 1933. *Jewish Quart.,* 30 (1983), 18-25.
Jews in British Society. Review of Harold Pollins, *Economic History of the Jews in England* and Geoffrey Alderman, *The Jewish Community in British Politics. Jewish Journal of Sociology,* xxvi (1984), 53-9.

GELLER, M. J., More Graeco-Babyloniaca. *Zeitschrift für Assyriologie,* 73 (1983), 114-20.
A-bar-sal at Ebla. *Revue d'Assyriologie,* 77 (1983), 89-90.
Reviews of the following: Ali Abou-Assaf *et al. La Statue de Tell Fekherye et son inscription bilingue assyro-araméenne. Bull. School Oriental and African Studies,* 46 (1983), 545-6.
Briggs Buchanan, *Early Near Eastern Seals in the Yale Babylonian Collection. Bibliotheca Orientalis,* 40 (1983), 208, 210.
Thorkild Jacobsen, *Salinity and Irrigation Agriculture in Antiquity, Bull. School of Oriental and African Studies,* 47 (1984), 331-2.

LOEWE, R., Translations of Callimachus' Elegy on Heraclitus *(in Hebrew), Prozah,* 60-63, (1983), 98-9.

HISTORY

BLAKEMORE, H., Guest Editor, The export of capital to Latin America in the nineteenth and twentieth centuries. *Ibero-Amerikanisches Archiv,* special issue, pts 3 & 4 (1983), 253-439.
Co-editor, *J. Latin American Studies,* 15, 2 (1983), 269-550; 16, 1 (1984), 1-239.

BOXER ,C. R., *A Descriptive List of the State Papers Portugal, 1661-1780, in the Public Record Office, London,* Vol. III, *1789-1780.* Lisbon: Academia das Ciencias de Lisboa with the British Academy, London, 1984. 436 pp.

From Lisbon to Goa, 1500-1700. Studies in Portuguese Maritime Expansion. London: Variorum Reprints Publications, 1984. 314 pp.

New light on the relations between the Portuguese and the Omani, 1613-1633. *J. Oman Studies,* vi 1 (1983), 35-40.

BURNS, J. H., St German, Gerson, Aquinas, and Ulpian. *History of Political Thought,* iv (1983), 443-9.

Jeremy Bentham: from radical enlightenment to philosophic radicalism. *The Bentham Newsletter,* 8 (1984), 4-14.

CLARKE, HELEN, *The Archaeology of Medieval England.* London: Colonnade Press, 1984. 224 pp.

English East Coast ports in the Middle Ages. *Lübecker Schriften zur Archäologie und Kulturgeschichte,* 7 (1983), 69-75.

The Cardiff Conference 1983. *Medieval Archaeology,* 27 (1983), 159-60.

Translations of the following: *Vendel Period,* ed. H.-Å. Nordström. Stockholm: The Museum of National Antiquities, 1983. 190 pp.

Swedish Archaeology, ed. A. Furingsten. Stockholm: Riksantikvarieämbetet och Statens Historiska Museer Rapport, 1983. 307 pp.

Swedish Seminar Papers in Archaeology 1976-1980, J. P. Lamm. Stockholm: Arkaeologiske Rapporter och Meddelanden från Institutionen för Arkeologi vid Stockhoms Universitet, 1984. 39 pp.

(with Lamm, K.), Editors, *Excavations at Helgö IX.* Stockholm: Kungliga Vitter hets Historie och Antikvitets Akadamien, 1984. 98 pp.

COLEMAN, C. H. D., (with Barron, Caroline, Gobbi, Claire), editors, *The London Journal of Alessandro Magno 1562. London Jnl.,* 9 (1983), 136-52.

CONWAY, S. R., British Army Officers and the American War for Independence. *William & Mary Quarterly,* xli (1984), 265-76.

DAUNTON, M. J., *House and Home in the Victorian City: Working-Class Housing, 1850-1914.* London: Edward Arnold, 1983. ix + 320 pp.

Edtor, *Councillors and Tenants: Local Authority Housing in English Cities, 1919-39.* Leicester University Press, 1984. xi + 223 pp.

Introduction. *Ibid.,* 1-38.

(with Morgan, N. J.), Landlords in Glasgow: a study of 1900. *Business History,* xxv, 3 (1983), 264-86.

DAVIES, WENDY E., Celtic women in the early middle ages. *Images of Women in Antiquity,* ed. Averil Cameron and Amélie Kuhrt. London: Croom Helm, 1983, 145-66.

Priests and rural communities in East Brittany in the ninth century. *Études Celtiques,* xx (1983), 177-97.

(with Astill, G.), Recherche sur le terrain dans l'est de la Bretagne (EBS) 1983. *Archéologie en Bretagne,* xxxix (1984), 13-23.

(with Astill, G.), Prospections archéologiques dans l'est de la Bretagne. *La prospection archéologique en Haute-Bretagne, Dossiers du Centre Régional Archéologique d'Alet,* No.G (1984), 251-60.

GRAHAM CAMPBELL, J. A., The Viking-age silver hoards of the Isle of Man. *The Viking Age in the Isle of Man,* ed. J. A. Graham-Campbell, P. Foote and R. Thomson. London: The Viking Society for Northern Research, 1983, 53-80.

An Anglo-Scandinavian silver ornament of tenth-century date from Manchester. *Medieval Manchester: a regional study,* M. Morris. Manchester: Greater Manchester Archaeological Unit, 1983, 7-8.

Celtic Art. *Dictionary of the Middle Ages,* ed. J. R. Strayer. New York: Charles Scribner's Sons, 1983, 218-25.

A Middle Saxon gold finger-ring from the Cathedral Close, Exeter. *Antiquaries J.,* 62 (1982), 366-7.

An unpublished gold finger-ring of Viking-age date from the Isle of Skye, and new light on the 1850 Skye hoard. *Proc.Soc.Antiquaries of Scotland,* 112 (1982), 568-70.

A bronze 'thistle-brooch' of Viking-age date from near Kinlochleven, Argyllshire. *Glasgow Archaeological J.,* 10 (1983), 159-60.

Irish Monastic art, 5th to 8th centuries. *Monastic Studies,* 14 (1983), 225-45.

Viking hoards. *British Heritage,* 5 (1983-4), 42-7.

(with Fell, C., Foote, P., Thomson, R.), Editors, *The Viking Age in the Isle of Man.* London: The Viking Society for Northern Research, 1983. 188 pp.

GWYNN, R. D., The number of Huguenot immigrants in England in the late seventeenth century. *J. Hist. Geog.* 9 (1983), 384-95.

HARTE, N. B., Editor, UCL *Bulletin,* vol. 5, 1980-83.

Assistant Editor, *Economic History Review,* 2nd ser., vols.XXXII-XXXVII, 1979-84.

General Editor, *Pasold Studies in Textile History.* London: Heinemann Educational Books, vol.5, 1984, continuing.

A List of the Published Writings of K. G. Ponting. *Textile History,* XIV (1983), 111-13.

HIRST, S. M., WRIGHT, S. M. (with Walsh, D. A.), *Bordesley Abbey II. Second report on excavations at Bordesley Abbey, Redditch, Hereford-Worcestershire,* ed. S. M. Hirst and S. M. Wright. British Archaeological Reports, British series 111, 1983, xi + 298 pp.

HUMPHREYS, SARAH C., *Anthropology and the Greeks.* London: Routledge & Kegan Paul, 1983. xi + 357 pp.

The evolution of legal process in Attica. *Tria Corda. Scritti in onore di Arnaldo Momigliano,* ed. E. Gabba. Como: New Press, 1983, 229-56.

Fustel de Coulanges and the Greek 'genos'. *Sociologia del Diritto,* 8 (1983), 35-44.

The date of Hagnias' death. *Classical Philology,* 78 (1983), 219-25.

History and anthropology. *History Today,* 34 (1984), 47-8.

ISRAEL, J. I., Spanje en de Nederlandse Opstand. *Republiek tussen Vorsten,* ed. S. Groenveld and F. M. Wieringa. Amsterdam: Zutphen, 1984, 51-60.

Central European Jewry during the Thirty Years' War. *Central European History,* xvi (1983), 3-30.

The economic contribution of Dutch Sephardi Jewry to Holland's Golden Age, 1595-1713. *Tijdschrift voor Geschiedenis,* 96 (1983), 505-35.

An Amsterdam Jewish merchant of the Golden Age: Jeronimo Nunes da Costa (1620-97), agent of Portugal in the Dutch Republic. *Studia Rosenthaliana,* xviii (1984), 21-40.

JAMIESON, A. G., Two Scottish marines in the American War: the letters of William & James Home of Broomhouse, 1778-1782. *The Mariner's Mirror,* 70 (1984), 21-30.

Business archives and the Channel Islands shipping project. *Business Archives Council Newsletter,* n.s., 53 (1984), 9-10.

JOHNSON, D. W. J., Editor's Preface. Roger Magraw, *France 1815-1914.* London: Fontana, 1983, 12-16.

The French view. *1939: A Retrospect,* ed. Roy Douglas. London:Macmillan, 1983, 54-64.

Introduction. *Socialism in France from Jaurès to Mitterrand,* ed. Stuart Williams. London: Frances Pinter, 1983, viii-xii.

Historians. *The French Romantics,* ed. D. G. Charlton. Cambridge University Press, 1984, 274-308.

Raymond Aron. *Times Lit. Suppl.* (9 Dec. 1983), 1378. The old men in power. *New Society,* 67, 1102 (1984), 7-9.

At the Summit. *Ibid.,* 1112 (1984), 414.

Scapegoats of the Revolution: anti-Semitism in France. *Times Higher Educ. Suppl.,* 592 (1984), 13.

The maid's story: French literature and the Left. *The Spectator,* 17 March (1984), 26.

Simone de beauvoir. *London Review of Books,* 6, 10 (1984), 11-12.

JONES, M. A., *The Limits of Liberty: American History, 1604-1980.* Oxford & New York: Oxford University Press, 1983. vii + 680 pp.

KUHRT, AMÉLIE T. L., A brief guide to some recent work on the Achaemenid Empire. *Liverpool Classical Monthly,* 8.10 (1983), 146-53.

The concept of Achaemenid Kingship. *Iran,* 22 (1984), 156-60.

Reviews of the following: N. K. Sandars, *The Seapeoples;* A. Strobel, *Der Spätbronzezeitliche Seevölkeraturm. Bull.Inst. Archaeology,* 19 91982), 189-92.

G. J. P. McEwan, *Priest and Temple in Hellenistic Babylonia. J. Royal Asiatic Soc.,* 2 (1983), 282-3.

(with Cameron, Averil), Editors, *Images of Women in Antiquity.* London: Croom Helm; Detroit: Wayne State University, 1983. xi + 323 pp.

LYNCH, J., *Simón Bolívar and the Age of Revolution.* London: Institute of Latin American Studies, Working Papers, no.10, 1983. 29 pp.

La independència de l'Amèrica espanyola (1808-1826). *L'Avenç,* 41 (1981), 52-60.

The British in Buenos Aires in the time of Rosas: immigrants, merchants, and diplomats. *VI Congreso Internacional de Historia de Amèrica,* vi Buenos Aires: Academia Nacional de la Historia, 1982, 223-44.

Gran Bretaña, Simón Bolívar y la independencia hispano-americana. *Revista de Occidente,* 30-31 (1983), 159-70.

MILLAR, F. G. B., State and subject: the impact of monarchy. *Caesar Augustus: Seven Aspects,* ed. F. G. B. Millar. Oxford University Press, 1984, 37-60.

Epigraphy. *Sources for Ancient History,* ed. M. Crawford. Cambridge University Press, 1983, 80-136.

The Phoenician cities: a case-study of Hellenisation. *Proc.Camb.Phil.Soc.,* 209 (1983), 55-71.

Empire and city, Augustus to Julian: obligations, excuses and status. *J. Roman Studies,* 73 (1983), 76-96.

The Mediterranean and the Roman Revolution: politics, war and the economy. *Past & Present,* 102 (1984), 3-24.

(with Segal, E.), Editor, *Caesar Augustus: Seven Aspects.* Oxford University Press, 1984. x + 221pp.

MOMIGLIANO, A. D., *Settimo Contributo alla Storia degli Studi Classici e del Mondo Antico.* Rome: Edizioni di Storia e Letteratura, 1984. 539pp.

The origins of universal history. *The Poet and the Historian,* ed. R. E. Friedman. Chicago: Scholars Press, 1983, 133-54.

Avant-propos. *De Berlin à Jérusalem,* G. Scholem. Paris: Albin Michel, 1984, 9-19.

Fustel de Coulanges e la recente ricerca su Roma arcaica. *Sociologia del Diritto,* 9 (1982-3), 27-33.

An inscription from Lyons and the language situation of Gaul in the third and fourth centuries. *Annali Scuola Normale Superiore Pisa,* 12 (1982), 1105-15.

K. O. Müller's *Prolegomenza zu einer wissenschaftlichen Mythologie* and the meaning of myth. *Ibid.,* 13 (1983).

Premesse per una discussione su Georges Dumézil. *Opus,* 2 (1983), 329-48.

Platone, la storia e gli storici secondo P. Vidal-Naquet. *Rivista Storica Italiana,* 95 (1983), 447-50.

The theological efforts of the Roman upper classes in the first century B.C. *Classical Phil.,* 79 (1984).

The introduction of the teaching of history as an academic subject and its implications. *Minerva,* (1984).

Interview with Arnaldo Momigliano. *Le Monde aujourd'hui* (26 Feb. 1984), xi (Italian trans., *La Stampa,* 22 March 1984, 3).

Reviews of the following: K. Christ, *Römische Geschichte und deutsche Geschichtswissenschaft.. Am. Hist. Rev.* 89 (1984), 105-6.

P. M. Martin, *L'Idée de royauté à Rome. Rivista Storica Italiana,* 95 (1983), 521-3.

Th. Kabdebo, *Diplomat in Exile. Francis Pulszky's Political Activities in England. Ibid.,* 557-8.

R. Doran, *Temple Propaganda. Classical Phil.,* 79 (1984), 177-8.

ROBSON, J. M., Editor, *Essays on Equality, Law and Education,* vol.XXI. University of Toronto Press, 1984. lxxxiii + 502 pp.

John Stuart Mill, self-educated scientist — with a little help from his friends. *Victorian Studies Newsletter,* 31 (1983), 9-19.

Narrative transitions in *Middlemarch. Humanities Assoc. Rev.,* xxi (1980), 97-120.

Which Bentham was Mill's Bentham? *Bentham Newsletter,* 7 (1983), 15-26.

Harriet Taylor on marriage: two fragments. *Mill Newsletter,* xviii (1983), 2-6.

What was the question? *Trans.Royal Soc. Canada,* ser.iv, xx (1982), 235-52.

(with Laine, M., Kinzer, B.), Editor, *Mill Newsletter,* continuing.

ROSEN, F., *Jeremy Bentham and Representative Democracy: A Study of the Constitutional Code.* Oxford: Clarendon Press, 1983. 255 pp.

Editor, *The Bentham Newsletter,* 8 (1984), 63 pp.

Reviews of the following: J. H. Burns and H. L. A. Hart (eds.), An Introduction to the Principles of Morals and Legislation by Jeremy Bentham. *The Modern Law Review,* xlvi (1983), 675-7.

Robin Evans, *The Fabrication of Virtue: English Prison Architecture, 1750-1840. The Bentham Newsletter,* 8 (1984), 54-5.

ROUECHÉ, CHARLOTTE M. (with Erim, K. T.), Sculptors from Aphrodisias: some new inscriptions. *Papers of the British School at Rome,* 50 (1982), 102-15.

SWART, K. W., Oranje en de opkomst van het Statenbewind. *Spieghel Historiael,* 19 (1984), 195-200.

Warum hat Wilhelm von Oranien im Jahre 1568 gegen den König von Spanien zu den Waffen gegriffen?

Dillenburger Blätter, I, 2 (1984), 4-20.

William of Orange: the foundation of the Dutch Republic. *History Today,* 34 (1984), 41-4.

THOMPSON, F. M. L., Editor, *Horses in European Economic History: A Preliminary Canter.* Reading: The British Agricultural History Society, 1983. 206 pp.

Horses and hay in Britain, 1830-1918. *Ibid.,* 50-72.

VAN BREMEN, HENRIETTA C., Women and wealth. *Images of Women in Antiquity,* ed. A. Cameron and A. T. L. Kuhrt. London: Croom Helm, 1983, 223-43.

Vrouwen in aanzien: Griekse stedelijke elites in de hellenistisch-romeinse tijd. *LAMPAS* (1984), 46-62.

WEDGWOOD, C. VERONICA. *The Spoils of Time: A Short History of the World.* Vol. I. *From Earliest Times to the 16th Century.* London: Collins, 1984, 400 pp.

WELCH, M. G., A peliminary assessment of the finds from East Marden. *Chichester Excavations Committee Report for 1982,* 9-10.

Apple Down: the finds from the 1983 season. *Chichester Excavations Committee Report for 1983,* 5.

The firesteel. J. P. C. Kent, T. Tatton Brown and M. Welch, *A Visigothic gold tremissis and a fifth-century firesteel from the Marlowe Theatre site, Canterbury. Antiquaries J.,* 63 (1983), 372-3.

Anglo-Saxon art in the Merovingian period — a summary. *Bull. de liason de l'Association Francaise d'Archéologie Merovingienne,* 8 (1984), 55-8.

Saxon Sussex. *Current Archaeology,* 8, 9 (1984), 280-2.

WHITE, K. D., *Greek and Roman Technology.* London: Thames and Hudson, 1984. 272 pp. + 177 illus.

WRIGHT, E., *The Fire of Liberty.* London: Hamish Hamilton, 1984. 256 pp.

WRIGHT, SUSAN M., *The Derbyshire Gentry in the Fifteenth Century.* Gloucester: Alan Sutton, for Derbyshire Record Society, 1983. viii + 287 pp.

HISTORY OF ART

BOUCHER, B. A., Jacopo Sansovino e la Scultura Veneziana del Manierismo. *Cultura e Societa nel Rinascimento,* ed. V. Branca and C. Ossola. Florence: 1984, 335-50.

(with Radcliffe, A.), Sculpture. *The Genius of Venice 1500-1600,* ed. C. Hope and J. Martineau. London: 1983, 355-91.

COOKE, LYNNE, Exhibition catalogue. *Anthony Gormley.* New York: Salvatore Ala, 1984.

Exhibition catalogue. *Richard Wentworth.* London: Lisson Gallery, 1984.

Alexander Calder at Turin. *Burlington Mag.* (October 1983).

Gilbert & George. *Art Monthly* (May 1984).

Richard Deacon. *Transformations: New Sculpture from Britain.* London: British Council, 1983, 24-33.

VAUGHAN, WILLIAM, The visual arts. *The French Romantics,* vol.11, ed. F. G. Charlton. Cambridge University Press, 1984, 353-81.

Introduction to catalogue *German Romantic Drawings from Dusseldorf.* London: Goethe Institute, 1984, 3-9.

WEBSTER, MARY, Francis Wheatley's Lord and Lady Artum. *Irish Arts Rev.,* I (1984).

WESTON, HELEN, Prud'hon in Rome; pages from an unfinished sketchbook. *Burlington Mag.* (January 1984).

Exhibition review of Benigne Gagneraux. *Ibid.* (November 1983), 714-17, 719.

WHITE, J. E. C. T., *Studies in Renaissance Art.* London: Pindar Press, 1983. 373 pp. with illust.

ITALIAN

HALE, J. R. (with Mallett, M. E.), *The Military Organization of a Renaissance State: Venice c.1400 to 1617.* Cambridge University Press, 1984. 524 pp.

A Europa durante o Renascimento. Lisbon, 1983. 283 pp. (Translation of *Renaissance Europe 1480-1520.* 1971).

Humanism and Renaissance 1350-1527. *The Italian World,* ed. John Julius Norwich. London: Thames and Hudson, 1983. 121-46.

Italian Renaissance images of war. *J.Roy. Soc. Arts* (December 1983), 61-79.

LEPSCHY, A. L., *Tintoretto Observed: a documentary survey of critical reactions from the 16th to the 20th century.* Ravenna: Longo, 1983. 296 pp.

Appunti su antitesi e anafora nella Gerusalemme Liberata. *Miscellanea di studi in onore di V. Branca,* III. Florence: Olschki, 1983, 797-808.

Recent studies on Boccaccio. *Studi sul Boccaccio,* 13 (1983), 405-7.

LINDON, J. M. A., Italian studies: Seicento and Settecento. *The Year's Work in Modern Language Studies,* 44 (1984), 572-93.

Review of V. Alfieri, *Saul,* ed. C. Jannaco and A. Fabrizi. *The Modern Language Review,* 78 (1983), 727-8.

LATIN

HORSFALL, N. M., The Caudine Forks: topography and illusion. *Papers of the British School at Rome,* L (1982), 45-52.

The structure and purpose of Vergil's parade of heroes. *Ancient Society (Macquarie),* XII.3 (1982), 12-18.

Some problems in the 'Laudatio Turiae'. *Bull. Inst. of Classical Studies,* 30 (1983), 85-98.

Decus et tutamen. *Omnibus,* 6 (1983), 20.

(reprint) Prose and mime. *Cambridge History of Classical Literature,* vol. 2, pt 2 *The Late Republic.* Cambridge University Press, 1983, 112-20, 133-7.

Reviews of the following: G. Dury-Moyaers, *Enée et Lavinium. J. Roman Studies,* 73 (1983), 202-3.

W. Moskalew, *Formular Language and Poetic Design in the Aeneid. Classical Rev.,* 33 (1982), 320.

Colin Macleod, *Collected Essays. Times Lit. Suppl.,* 4218 (1984), 103.

Giampiera Arrigoni, *Camilla. Classical Rev.,* 34 (1984), 61-2.

R. F. Thomas, *Lands and Places in Roman Poetry. Ibid.,* 133-4.

A. Grilli, I. Gualandri (ed.), *Scripta Philologa III. Ibid.* 157-8.

(with Castagnoli, Ferdinando) Memoir of Bertha Tilly. *Vergilius,* 29 (1983), 52-3.

IRELAND, R. I., *Scriptores rei militaris romanae,* vol. I. *Anonymus de rebus bellicis.* Leipzig: Teubner, 1984. xxxiv + 30 pp.

WILLCOCK, M. M., Editor and commentary, *The Iliad of Homer, Books XIII-XXIV.* London: Macmillan, 1984. xxix + 328 pp.

Homer today. *Greece Old and New,* ed. T. Winnifrith and P. Murray. London: Macmillan, 1983, 25-38.

Battle scenes in the Aeneid. *Proc. Camb. Phil. Soc.,* 29 (1983), 87-99.

LIBRARY, ARCHIVE AND INFORMATION STUDIES

GOLDEN, J., *The Sharpe Papers 1715-1935: comprising the Papers of the Rogers, Sharpe, Reid and Kenrick families.* Occasional Publications, No. 8. London: The Library, University College London, 1983.

MERRINGTON, M., GOLDEN, J., HOGARTH, J. (with Blundell, B., Burrough, S.), *A List of the Papers and Correspondence of Karl Pearson (1857-1936) held in the Manuscripts Room, University College London Library.* London: University College London, 1983.

THOMAS, D. L., Financial and administrative developments. *Before the English Civil War,* ed. H. Tomlinson. London: Macmillan, 1983, 103-22.

Conservation: new techniques and new attitudes. *Archives,* 16 (1983), 167-77.

WATSON, A. G., *Catalogue of Dated and Datable Manuscripts c.435-1600 in Oxford Libraries.* 2 vols. Oxford: Clarendon Press, 1984. 176 pp., + 890 illusts.

PHILOSOPHY

BUDD, M. J., Wittgenstein on meaning, interpretations and rules. *Synthese,* 58 (1984), 303-23.

COHEN, G. A., Reconsidering historical materialism. *Marxism,* ed. J. Roland Pennock and John W. Chapman. New York University Press, 1983, 227-52.

Reply to four critics. *Analyse und Kritik,* 5 (1983), 195-222.

More on exploitation and the labour theory of value. *Inquiry,* 26 (1983), 309-31.

Allen Wood, *Karl Marx. Mind,* XCII, 367 (1983), 440-5.

HART, W. D., Prior and Belnap. *Theoria,* XLVIII (1982), 127-38.

Russell and Ramsey. *Pacific Philosophical Quart.,* 64 (1983), 193-210.

HEINAMAN, R. E., Communion of forms. *Proc. Aristotelian Soc.,* LXXXIII (1982/83), 175-90.

Housecleaning and the time of a killing. *Philosophical Studies,* 44 (1983), 381-9.

HONDERICH, TED, Editor and General and particular introductions. *Philosophy Through Its Past.* Harmondsworth: Pelican, 1984. 534 pp.

General Editor, *The International Library of Philosophy and Scientific Method.* London: Routledge and Kegan Paul, 1984.

General Editor, *The Arguments of the Philosophers.* London: Routledge and Kegan Paul, 1984.

General Editor, *The Problems of Philosophy.* London: Routledge and Kegan Paul, 1984.

Culpability and mystery. *Philosophy and the Criminal Law,* ed. Antony Duff and Nigel Simmonds. Wiesbaden: Franz Steiner Verlag, 1984, 70-77

Smith and the champion of mauve. *Analysis,* 44 2 (1984), 86-9.

Actions and psychophysical intimacy. *Inquiry,* 27 1 (1984), 143-5.

The principle of equality: reply to Nathan. *Mind,* XCIII, 370 (1984), 249-52.

MCGINN, C., What is the problem of other minds? *Proc. Aristotian Soc., Suppl.* vol., LVIII (1984), 119-37.

The concept of knowledge. *Midwest Studies in Philosophy,* ed. P. A. French et al. Minneapolis: University of Minnesota Press, 1984, 102-27.

PHONETICS AND LINGUISTICS

ABBERTON, E., FOURCIN, A. J., Electrolaryngography. *Clinical Phonetics,* ed. C. Code and M. Ball. London: Croom Helm, 1984, 62-78.

ASHBY, M., Effects of variation in larynx height. *Speech, Hearing and Language: Work in Progress,* 1. London: University College London, 1983, 29-39.

BALL, V., Interactive speech tests in the study of perceptual strategies of hearing-impaired children, with special reference to speech production. *Ibid.* 213-17.

FOURCIN, A. J., Report on Symposium 4: auditory analysis and speech perception. *Proceedings of the 10th International Congress of Phonetic Sciences,* ed. M. P. R. van den Broecke and A. Cohen. Dordrecht: Foris, 1984, 171-4.

(with Gleeson, M. J.), Clinical analysis of laryngeal trauma secondary to intubation. *J.Roy.Soc.Med.,* 76 (1983), 928-32.

(and others), Examination of vocal fold movement by ultra-short pulse x-radiography. *Brit.J.Radiology,* 56 (1983), 641-5.

FOURCIN, A. J., ABBERTON, E., ROSEN, S. (and others), Speech pattern element stimulation in electrical hearing. *Archives of Otolaryngology,* 110 (1984), 145-53.

FOURCIN, A. J., ROSEN, S. M., WALLIKER, J. R., HOWARD, D. M., ABBERTON, E. (and others), Extracochlear electrical stimulation with speech patterns: experiences of the EPI group (UK). *Adv.Audiol.,* 2 (1984), 148-62.

HAZAN, V., FOURCIN, A. J., Interactive speech synthesis in the study of normal perceptual development. *Proceedings of the 10th International Congress of Phonetic Sciences,* ed. M. P. R. van den Broecke and A. Cohen. Dordrecht: Foris, 1984, 600-3.

Interactive speech synthesis in the assessment of the perceptive abilities of hearing impaired children. *Speech, Hearing and Language: Work in Progress,* 1. London: University College London, 1983, 41-57.

Speech pattern assessment of a patient with central deafness. *Ibid.,* 59-67.

HOUSE, G., Nucleus and focus: a pilot study. *Speech, Hearing and Language: Work in Progress.* 1. London: University College London, 1983, 69-85.

HOWARD, D. M. (with Miller, D.), Television speech polarity detection for peek picking fundamental frequency extraction. *Speech, Hearing and Language: Work in Progress,* 1. London: University College London, 1983, 205-12.

(with Seligman, P.), Initial comparisons between two simple time-domain fundamental frequency detectors. *Speech, Hearing and Language: Work in Progress,* 1. London: University College London, 1983, 95-105.

HOWARD, D. M., FOURCIN, A. J., Instantaneous voice period measurement for cochlear stimulation. *Electron.Letts,* 19 (1983), 776-8.

JUDD, M. W., Correction of low frequency phase distortion of electro-laryngographic waveform recordings using a BBC microcomputer. *Speech, Hearing and language: Work in Progress,* 1. London: University College London, 1983, 119-29.

MAIDMENT, J. A., Language recognition and prosody: further evidence. *Speech, Hearing and Language: Work in Progress,* 1. London: University College London, 1983, 131-41.

ROSEN, S. (with Howell, P.), Natural auditory sensitivities as universal determiners of phonemic contrasts. *Explanations for Language Universals,* ed. B. Butterworth, B. Comrie and O. Dahl. Berlin: Mouton, 1983, see also: *Linguistics,* 21 (1983), 205-35.

(with Howell, P.), Sinusoidal plucks and bows are not categorically perceived, either. *Perception & Psychophysics,* 34 (1983), 233-6.

(with Howell, P.), Closure and rication measurements and perceptual integration of temporal cues for the voiceless affricate/fricative contrast. *Speech, Hearing and Language: Work in Progress,* 1. London: University College London, 1983, 107-17.

(with Howell, P.), Do tone onset time continua have a natural sensitivity at 20ms: a reanalysis of Hirsh's (1957) data. *Speech, Hearing and Language: Work in Progress,* 1. London: University College London, 1983, 143-59.

ROSEN, S., FOURCIN, A. J., When less is more — further work. *Speech, Hearing and Language: Work in Progress,* 1. London: University College London, 1983, 1-27.

SMITH, N. V., On interpreting conditionals. *Speech, Hearing and Language: Work in Progress,* 1. London: University College London, 1983, 161-86.

WALLIKER, J. R., FOURCIN, A. J., ROSEN, S. (and others), Speech signal presentation to the totally deaf. *J.Biomed.Engng,* 5 (1983), 316-20.

WILSON, D. (with Sperber, D.), On defining 'relevance'. *Speech, Hearing and Language: Work in Progress,* 1. London: University College London, 1983, 187-204.

POLITICAL ECONOMY

CHICK, V., *La Macroeconomica dopo Keynes.* Bologna: Il Mulino, 1984. 581 pp.

A question of relevance: The General Theory in Keynes's time and ours. *South African J. Econ.,* 51 (1983), 380-406.

HENDERSON, P. D., Trade policies: trends, issues and influences. *Mudland Bank Rev.,* (Winter 1983), 8-19.

LAL, D. (with Wolf, M.), Recovery or relapse in the world economy? *World Development Report 1984, World Bank Oxford.* Oxford University Press, 1984, 11-50.

MARKANDYA, A., Headship rates and the household formation process in Great Britain. *Appl. Econ.,* 15, No.6 (1984), 821-31.

PEARCE, D. W., *Cost Benefit Analysis,* 2nd ed. Basingstoke: Macmillan, 1983, 112 pp.

Oil importing developing countries. *The Third Oil Shock: the Effects of Lower Oil Prices,* ed. J. Pearce. London: Royal Institute of International Affairs, 1983, 48-59.

Nuclear fuel and fuel waste transport: some implication for decision-making. *The Urban transportation of Irradiated Fuel,* ed. J. Surrey. London: Macmillan, 1984. 49-54.

The monetary value of environmental costs and benefits. The nature of cost benefit analysis. *Economics and Environmental Policy,* ed. Australian Department of Home Affairs and Environment. Canberra: Australian Government, 1983, 6-10; 43-6.

The role of economics in assessing desirable air quality levels. *Clean Air,* 133 (1984), 88-94.

(with Akehurst, R., West, P., Mooney, G.), Rational establishment of air quality standards. *Environmental Health Perspectives,* 52 (1983), 182-8.

(with Barde, J-Ph.), Les incidences sociales des politiques de l'environment. *Futuribles* (March 1984), 37-44.

(with Lambert, J., Barde, J-Ph.), Estimating the cost of noise pollution in France. *Ambio,* XIII, 1 (1984), 27-8.

(with Walter, I., Siebert, H.), *Risk and the Political Economy of Resource Development.* London: Macmillan, 1984, 422 pp.

PEARCE, D. W., WESTOBY, R., Energy and the European economy. *Britain in the European Community — the Way Forward,* ed. A. El-Agraa. London: Macmillan, 1983, 187-212.

RAU, N. J., Does unemployment benefit affect unemployment? *Econ.Rev.,* 1 (1984), 26-30.

(with Atkinson, A. B., Gomulka, J., Micklewright, J.), Unemployment benefit, duration and incentives in Britain. *J. Public Economics,* 23 (1984), 3-26.

(with Atkinson, A. B., Gomulka, J., Micklewright, J.), Durée du chômage et incitations. *Annales de l'Insee,* 52 (1983), 1-20.

SCHOTT, K., The rise of Keynesian economics, 1940-64. *States and Societies,* ed. D. Held. Oxford: Martin Robinson.

Design and economic competitiveness. *Roy.Soc. Arts J.* (1984).

(with Austerberry, H., Watson, W.), *Homeless in London: 1971-81.* London: International Centre for Economics and Related Disciplines, 1984.

(with Rothwell, R., Gardiner, P.), *Design and the Economy.* London: The Design Council, 1983.

SPRAOS, J., On the commodity power of less developed countires. *J. Post-Keynesian Econ.,* 6 (1983-84), 605-13.

The old targets are shot full of holes. *The Guardian* (26 March 1984).

STEWART, M., *Controlling the Economic Future: Policy Dilemmas in a Shrinking World.* Brighton: Harvester Press, 1983. x + 192 pp.; and in the USA as *The Age of Interpedendence: Economic Policy in a Shrinking World,* Cambridge, Massachussetts: MIT Press, 1984.

(and others), *Democracy Must Work:* a *Trilateral Agenda for the Decade.* New York University Press, 1984. 224 pp.

TOKER, M. A., A note on the 'negative' quantities of embodied labour. *Econ. J.,* 94 (1984), 149-54.

WESTOBY, R., Models of interfuel substitution in the UK. *J. Econ. Studies,* 11, No. 1 (1984), 27-39.

(with McGuire, A.), Factor substitution and complementarity in energy: a case study of the UK electricity industry. *Appl. Econ.,* 16, No. 1 (1984), 111-18.

(with McGuire, A.), Factor substitution in nuclear and fossil-fuelled electricity generation in England and Wales. *Resources and Energy,* 6 (1984), 69-76.

WESTOBY, R., PEARCE, D. W., Energy consumption in Eastern Europe: a cross sectional analysis. *Energy Econ.,* 6 No. 1, (1984), 2-4.

SCANDINAVIAN STUDIES

ALLAN, R. D. S., Danish studies: language. *The Year's Work in Modern Language Studies,* 44 (1982), 1033-7.

BARNES, M. P., Orkney and Shetland Norn. *Language in the British Isles,* ed. P. Trudgill. Cambridge University Press, 1984, 352-66.

FOOTE, P. G., *Aurvandilstá. Norse Studies,* ed. M. Barnes, H. Bekker-Nielsen and G. Weber. Odense University Press, 1984, 301 pp.

Recent work on Saxo Grammaticus. *Saga-Book,* XXI, 1-2 (1982-3), 101-6.

PETHERICK, K., *Dunungen* eller att finna sig själv genom kärleken. *Legerlöf-studier 1983,* 11-47.

Inlägg i den avslutande diskussionen. *Om stilforskning,* Vitterhets Historie och Antikvitetsakademien, *Konferenser* 9, (1983), 229-30.

SPANISH AND LATIN AMERICAN STUDIES

CUMMINS, J. S., C. R. Boxer — a bio-bibliographical note. *The Writings of C. R. Boxer (1926-1984),* ed. S. G. West. London: Tamesis Books, 1984, vii-xix.

The *Infortunios:* 'a just history of fact'? *Bull. Hispanic Studies,* 61 (1984), 295-303.

(with Soons, Alan), Editors, Carlos de Sigüenza y Góngora, *Infortunios de Alonso Ramírez.* London: Tamesis Texts, 1984. 88 pp.

GARCÍA, A. M., *'El médico de su honra:* perfil y función de Coquín. *Calderón: Actas del Congreso Internacional sobre Calderón y el Teatro Español del Siglo de Oro, Anejos de la Revista 'Segismundo' 6.* Madrid: CSIC, 1983, 1025-37.

Comicidad sin humor en *El pintor de su deshonra:* exploración de sus raíces cómico-trágicas. *Hacia Calderón,* Sexto Coloquio Anglogermano Würzburg 1981. Wiesbaden: F. Steiner, 1984, 123-33.

HENN, D., Endemic violence and political balance in Cela's *San Camilo, 1936. Romance Studies,* 3 (1983-84), 31-46.

Stephen Gilman's *Galdós and the Art of the European Novel: 1867-1887. Modern Language Rev.,* 78 (1983), 945-7.

PARKER, A. A., Edward Meryon Wilson. *Proc. Brit. Acad.,* LXVIII (1982), 644-66.

The New World in the *Autos* of Calderón. *Aureum Saeculum Hispanum.* Wiesbaden: F. Steiner, 1983, 261-9.

TORRENTS, N. (with Abel, C.), Editors, *Spain: Conditional Democracy.* London: Croom Helm, 1984. 199 pp.

BUTLER, W. E., *Basic Documents on the Soviet Legal System.* Dobbs Ferry, N.Y.: Oceana Publications, 1983. xi + 394 pp.

Centre for the Study of Socialist Legal Systems. Second Annual Report, 1983. London: University College London, 1984. 20 pp.

Editor and translator, *Collected Legislation of the USSR and Constituent Union Republics.* vol. 8. Dobbs Ferry, N.Y.: Oceana Publications, 1983. 550 pp.

Editor, *International Law on Microfiche.* Zug: IDC, 1984. 8 pp.

Translator, A. Kuznetsov, *The Journey.* Original title: *Continuation of a Legend, the Jottings of a Young Man.* New York: Transnational; Horizon/New Horizon Press, 1984. ix + 180 pp.

Editor, *Legislative Reform and East-West Trade.* Dobbs Ferry, N.Y.: Condyne Publishers, 1984. 145 pp. + 10 cassettes.

Soviet Law. (Butterworths Legal Systems of the World.) London: Butterworth, 1983. xxi + 374 pp.

Editor and translator, *The USSR, Eastern Europe, and the Development of the Law of the Sea.* Dobbs Ferry, N.Y.: Oceana Publications, 1983. 170 pp.

Treaty collections in eighteenth-century Russia: encounters with European experience. *Russia and the West in the Eighteenth Century,* ed. A. G. Cross. Newtonville, Mass: Oriental Research Partners, 1983, 249-58.

Introduction. *Anglo-Russian Relations: An Essay in Wood Engraving by Anatolii Kalashnikov with Commentary by W. E. Butler.* Pinner: Cuckoo Hill Press, 1983, 3-7.

Council for mutual economic assistance. *Encyclopedia of Public International Law,* vol. VI, ed. R. Bernhardt. Amsterdam: North-Holland, 1983, 82-6.

Evidence. *No Just Cause: The Law of Affinity in England and Wales: Some Suggestions for Change. A Report by a Group appointed by the Archbishop of Canterbury.* London: CIO Publishing, 1984, 64-5.

Sources of foreign trade law in socialist legal systems. *Legislative Reform and East-West Trade,* ed. W. E. Butler. Dobbs Ferry, N.Y.: Condyne Publishers, 1984, cassette 1.

Reform in Soviet foreign trade administration. *Ibid.,* cassette 2.

The Mongolian People's Republic. *Ibid.,* cassette 3.

The Statute of the Mongolian People's Revolutionary Party. *The Party Statutes of the Communist World,* ed. W. B. Simons and S. White. The Hague: Martinus Nijhoff, 1984, 297-321.

Bookplate bibliography: in search of the ideal reference tools. *The Bookplate J.,* i (1983), 90-6.

The development of international legal priodicals in Russia. *Rev.Socialist Law,* ix (1983), 367-76.

Sovieto-ho-shi no ich-danmen. *Ritsumeikan Law Rev.,* No. 1 (1983), 67-71 (in Japanese).

UCL-USSR link. *UCL Bulletin,* vi, No. 1 (1983), 12-13.

The USSR and UNCLOS III. *Oil & Gas Law and Taxation Rev.,* ii, No. 5 (1983), 98-104.

Translation of Charter of the All-Union economically accountable foreign trade association 'Stankoimport'. P.E. Vermeulen. *Some Legal Aspects of Trade between the UK and the USSR.* Leiden: 1983, 68-77.

Translation of Union of Soviet Socialist Republics: Law on the State Boundary of the USSR. *Int.Legal Materials,* xxii (1983), 1055-76.

CHENG, B., Custom: the future of general state practice in a divided world. *The Structure and Process of International Law,* ed. R. St J. Macdonald and D. M. Johnston. The Hague: Martinus Nijhoff, 1983, 513-44.

The legal status of outer space and relevant issues: delimitation of outer space and definition of peaceful use. *J.Space Law,* 11 (1983), Nos. 1 and 2; *Law and Security in Outer Space.* University of Mississippi, 89-105.

DENNIS, I. H., Evidence against a co-accused. *Current Legal Problems,* 36 (1983), 177-92.
Corroboration requirements reconsidered. *Criminal Law Rev.* (1984), 316-36.

DOSWALD-BECK, L., The meaning of the right to respect for private life under the European Convention on Human Rights. *HRLJ,* 4 (1983), 283-309.

ERRERA, R., Press law in France. *Press Law in Modern Democracies. A Comparative Study,* ed. P. Lahav. New York and London: Longman, 1984, 137-84.
Review of Guy S. Goodwin-Gill, *The Refugee in International Law. Times Lit. Suppl.* (11 May 1984).

FREEMAN, M. D. A., *The Rights and Wrongs of Children.* London and Dover, New Hampshire: Frances Pinter, 1983. 295 + ix pp.
The rights of the child in England. *Law and the Status of the Child,* ed. Anna Mamalakis Pappas. New York: United Nations Institute for Training and Research, 1983, 601-74.
Care proceedings. *Justice — Proc. Annual Members' Conf. — Family Law.* London: Justice (International Commission of Jurists), 1983, 26-33.
The concept of children's rights. *Providing Civil Justice for Children,* ed. Hugh Geach and Elizabeth Szwed. London: Edward Arnold, 1983, 21-39.
The rights of children in care. *Ibid.,* 210-45.
Decision-making in matters relating to children: insights from law and psychology. *Children and the Law,* ed. Sally Lloyd-Bostock. Oxford: Centre for Socio-Legal Studies, 1984, 1-10.
Closing children's homes — a case note on *Liddle v Sunderland Borough Council. J.Social Welfare Law* (1984), 44-6.
Children's rights — the literature. *Childright,* No. 2 (1983), 19-21.
The rights of the child in England. *Columbia Human Rights Law Rev.,* 13 (1983), 601-74.
The family and 1984. *Childright,* No. 5 (1984), 18-20.
(with Lyon, C. M.), *The Law of Residential Homes and Day-Care Establishments.* London: Sweet & Maxwell, 1984. 239 + xxvi pp.

HEPPLE, B. A., *Equal Pay and Industrial Tribunals.* London: Sweet & Maxwell, 1984. 72 pp.
Tort. *All England Law Reports Annual Review, 1983,* ed. Jane Allen. London: Butterworths, 1984, 327-42.
Unfair dismissals legislation in Great Britain. *Protecting Unorganized Employees against Unjust Discharge,* ed. J. Stieber and J. Blackburn. East Lansing: Michigan State University, 1983, 135-46.
Practice and procedure: proof and remedies. *Sex Discrimination and Equal Pay.* London: College of Law in collaboration with the Equal Opportunities Commission, 1984, 29-39.
Lord Donovan. *Dictionary of National Biography Supplement 1971-1980,* ed. Lord Blake. Oxford University Press.
Reviews of the following: Lord Wedderburn and others, *Labour Law and Industrial Relations. Legal Studies,* 4 (1984), 116-19.
O. Kahn-Freund, *Labour Law and Politics in the Weimar Republic. Industrial Law J.,* 12 (1983), 195-6.

IVAMY, E. R. H., *Fire and Motor Insurance,* 4th ed. London: Butterworths, 1984. 518 pp.
Casebook on Insurance Law, 4th ed. London: Butterworths, 1984. 277 pp.

JOWELL, J. L., Structure plans and social engineering. *Planning in Crisis* (1983), 37-46.

(with Millichap, D.), The enforcement of planning control in London. *J.Planning & Environment Law* (October 1983), 644-58.

KORAH, V., *Exclusive Dealing Agreements in the EEC — Regulation 67/67 Replaced.* London: ELC, 1984. xv + 101 pp.

Exclusive licenses of patent and plant breeders' rights under EEC law after *Maize Seed. Antitrust Bull.,* xxviii (1983), 699-755.

Voluntary price fixing extended by order of Government Commissioner — A.R.O.W./B.N.I.C. *European Law Rev.,* 8 (1983), 259-62.

The Pioneer Case in the European Court. *Ibid.,* 335.

Sale of a business: non-competition clause. *New Law J.* (1984), 429-30.

Group exemptions for exclusive distribution and purchasing. *C.M.L. Rev.,* 21 (1984), 53.

Resale price maintenance — US Supreme Court. *Business Law Brief, Financial Times* (April 1984), 13.

LACEY, N., Punishment, justice and consequentianism. *Philosophy and the Criminal Law,* ed. Anthony Duff and Nigel Simmonds. Wiesbaden: Franz Steiner Verlag, 1984, 21-9.

Dangerousness and criminal justice: the justification of preventive detention. *Current Legal Problems,* 36 (1983), 31-49.

Capital punishment: objections from principle and practice. *Government and Opposition,* 18 (1983), 407-20.

A change in the right direction? The C.R.E.'s consultative document. *Public Law* (Summer 1984), 186-94.

LESTER, A., Fundamental rights: the United Kingdom isolated? *Public Law* (Spring 1984), 46-72.

(with Wainwright, D.), *Equal Pay for Work of Equal Value: Law and Practice.* London: TMS Management Consultants, 1984. 32 pp.

LEWIS, A. D. E., Alluvio: the meaning of institutes II.1.20. *Studies in Justinian's Institutes in memory of J. A. C. Thomas,* ed. P. G. Stein and A. D. E. Lewis. London: Sweet & Maxwell, 1983, 87-95.

(with Stein, P. G.), Editors, *Studies in Justinian's Institutes in memory of J. A. C. Thomas.* London: Sweet & Maxwell, 1983. xii + 209 pp.

PARKINSON, F., The law of regional development communities: a comparative legal analysis. *Thesaurus Acroasium,* 12 (1982), 3-65.

Latin America, her newly industrialising countries and the new international economic order. *J.Latin American Studies,* 16 (May 1984), 127-41.

ROSE, F. D., *The Modern Law of Pilotage.* London: Sweet & Maxwell, 1984. 138 pp.

The Pilotage Act 1983. *Current Law Statutes Annotated,* ed. John Rogers Prosser. London: Sweet & Maxwell, 1983, 1-60. (ch.21.)

Deductions from freight for the carriage of goods by road. *Lloyd's Maritime and Commercial Law Quart.,* 2 (1984), 199-201.

Transhipment and the Hague-Visby rules. *Ibid.,* 202-4.

Review of *Benjamin's Sale of Goods,* 2nd ed. *Law Quart. Rev.,* 99 (1983), 328-31.

TWINING, W. L., Entries in *Biographical Dictionary of The Common Law,* ed. A. W. B. Simpson. London: Butterworth, 1983 on C. K. Allen (6-7); W. W. Cook (125); John Dickinson (149-50); Jerome Frank (190-3); Karl Llewellyn (319-22), J. H. Wigmore (531-5); Samuel Williston (543-4) and Hessel Yntema (554-5).

Keeping up to date in Xanadu. *Papers of the 7th Commonwealth Law Conf., Hong Kong* (1983), 235-40.

Taking facts seriously. *J.Legal Education,* 34 (1984), 22-42.

Evidence and legal theory. *Modern Law Rev.,* 47 (1984), 261-83. (Inaugural Lecture, UCL.)

Why Bentham? *The Bentham Newsletter,* No. 8 (1984), 34-49.
Some scepticism about some scepticisms, I. *Brit.J.Law & Soc.,* 11 (1984), 137-71.

USHER, J. A., Annotations to Releases 30, 31 and 32. *Encyclopedia of European Community Law,* ed. K. R. Simmonds. London: Sweet & Maxwell, 1983-84.
The financing of the Community. *Thirty Years of Community Law,* ed. G. Olmi. Brussels: Commission of the European Communities, 1983, 195-217.
Part 5: Competition. *Charlesworth's Mercantile Law,* 14th ed, ed. C. M. Schmitthof and D. A. G. Sarre. London: Stevens & Sons, 1984, 393-420.
The origin of cotton yarn. *European Law Rev.* (1983), 251-3.
Computers as scientific apparatus. *Ibid.,* 327-9.
ECSC preliminary ruling on the validity of an individual decision. *Ibid.,* 326-7.
Injunction to prevent breach of EEC competition rules. *J.Business Law* (1983), 494-5.
Pioneer: the Court's judgment. *Ibid.* (1984), 49-53.
Ford cars — the limits of interim measures. *Ibid.,* 346-8.
Advertising national products. *Ibid.,* 348-9.
Preliminary rulings on individual decisions — the undecided question or a plea of illegality? *European Law Rev.* (1984), 106-8.
Of discrimination, directives and direct effect. *Bar European Newsletter* (July 1984), 1-3.

FACULTY OF SCIENCE

BOTANY AND MICROBIOLOGY

ATKINSON, Y. E. (with Nugent, J. H. A.), Estimation of the functional size of photosystem II. *FEBS Letts.,* 70 (1984), 89-93.

ATKINSON, Y. E., EVANS, M. C. W., Electron carriers in photosystem 2 from *Phormidium laminosum. Advances in Photosynthesis Research,* ed. C. Sybesma. The Hague: Martinus Nijhoff/Dr W. Jung, 1983, 139-42.
Electron acceptors of photosystem 2 in the cyanobacterium *Phormidium laminosum. FEBS Letts.,* 159 (1983), 141-4.

BELL, P. R., Plastid envelopes in reproductive cells. *Eur. J. Cell Biol.,* 30 (1983), 279-82.
(with Woodcock, C. L. F.), *The Diversity of Green Plants,* 3rd ed. London: Edward Arnold, 1983. 360 pp.

BONNERJEA, J., EVANS, M. C. W., Evidence for two electron acceptors in the intermediary electron acceptor complex of photosystem I. *Advances in Photosynthesis Research,* ed. C. Sybesma. The Hague: Martinus Nijhoff/Dr W. Jung, 1983, 565-8.

BREARLEY, C., The reticulate irises *Iris* subgenus *Hermadactyloides* Spach. *Quart. Bull. Alpine Garden Soc.,* 52, No. 2 (1984), 158-67.

BUTT, T. M. (with Beckett, A.), Ultrastructure and behaviour of the spindle pole body of the aphid-pathogenic fungus *Erynia neoaphidis. Protoplasma,* 120 (1984), 61-71.
(with Beckett, A.), Ultrastructure of mitosis in the aphid-pathogenic fungus *Erynia neoaphidis. Protoplasma,* 120 (1984), 72-83.

DAHIYA, J. S., STRANGE, R. N. (with Bilyard, K., Cooksey, C. J., Garratt, P. J.), Two isoprenylated isoflavone phytoalexins from *Cajanus cajan. Phytochemistry,* 23 (1984), 871-3.

EVANS, M. C. W., Production and dissipation of membrane potential: formation of ATP and reducing equivalents. *The Phototrophic Bacteria,* ed. J. G. Ormerod. Oxford: Blackwell Scientific Publications, 1983, 61-75.

(with Heathcote, P.), The early photochemical events in bacterial photosynthesis. *Phototrophic Bacteria,* ed. J. G. Ormerod. Oxford: Blackwell Scientific Publications, 1983, 35-9.

EVANS, M. C. W., ATKINSON, Y. E., Properties of the electron acceptor complex of photosystem 2. *Oxygen Evolving System of Photosynthesis,* ed. Y. Inoue. London: Academic Press, 1983, 55-61.

EVANS, M. C. W., ATKINSON, Y. E., FORD, R. C., Primary electron transfer in the photosystem 2 reaction centre — characterisation of the electron acceptor complex. *Advances in Photosynthesis Research,* ed. C. Sybesma. The Hague: Martinus Nijhoff/Dr W. Jung, 1983, 127-30.

FORD, R. C. (with Barber, J.), Incorporation of sterols into chloroplast thylakoisa membranes and its effect on fluidity. *Planta,* 158 (1983), 35-41.

(with Chapman, D. J., Millner, P., Barber, J.), Lipid content of chloroplast thylakoids and regulation of photosynthetic electron transport. *5th Int. Symp. Biochem. and Metabolism of Plant Lipids,* ed. J. F. G. M. Wintermans and P. J. C. Kulper. Elsevier/North-Holland, 1983, 363-8.

FORD, R. C., EVANS, M. C. W., Isolation of a photosystem 2 preparation from plants with highly enriched oxygen evolution activity. *FEBS Letts.,* 160 (1983), 159-64.

FORD, R. C., EVANS, M. C. W., ATKINSON, Y. E. A., Kinetics of $P680^{+}$ reduction in oxygen-evolving photosystem 2 preparations from lettuce and *Phormidium laminosum. Advances in Photosynthesis Research.* ed. C. Sybesma. The Hague: Martinus Nijhoff/Dr W. Jung, 1983, 139-42.

GOLDSMITH, F. B., Ecological effects of visitors and the restoration of damaged areas. *Conservation in Perspective.* ed. A. Warren and F. B. Goldsmith. Chichester: Wiley, 1983, 201-14.

Evaluating nature. *Ibid.,* 233-46.

(with Wood, J. B.), Ecological effects of upland afforestation. *Conservation in Perspective,* ed. A. Warren and F. B. Goldsmith. Chichester: Wiley, 1983, 287-311.

(with Warren, A.) Editors, *Conservation in Perspective.* Chichester: Wiley, 1983. 474 pp.

HATTON, J. C., SMART, N. O. E., The effect of long-term exclusion of large herbivores on soilnutrient status in Murchison Falls National Park, Uganda. *African J. Ecol.,* 22 (1984), 23-30.

HATTON, J., SMART, N., THOMSON, K., In urgent need of protection — habitat for the woolly spider monkey. *Oryx,* 18 (1983), 24-9.

HAWKINS, S. W., PHILLIPS, R., 3-aminobenzamide inhibits tracheary element differentiation but not cell division in cultured explants of *Helianthus tuberosus. Plant Sci. Letters,* 32 (1983), 221-4.

HODGKIN, S. E., Scrub encroachment and its effect on soil fertility on Newborough Warren, Anglesey, Wales. *Biol. Conservation,* 29(2) (1984), 99-119.

HYAMS, J. S., A delicate molecular bouquet. *Nature,* 302 (1983), 291.

Rheumatoid sera unravel microtubule organizers. *Ibid.,* 308 (1984), 604-5.

A budding interest in the yeast cytoskeleton. *Ibid.,* 309 (1984), 15-16.

HYAMS, J. S., VONDY, K. P., LUBA, A., BELL, P. R., Structural and macromolecular events associated with basal body morphogenesis in *Marsilea. J. Submicroscopic Cytology,* 15 (1983), 133-8.

KING, S. M., A regulatory model for spindle function during mitosis. *J. Theoretical Biol.,* 102 (1983), 501-10.

KING, S. M., HYAMS, J. S., Analysis of anaphase B in *Saccharomyces cerevisiae* using a monoclonal antibody against yeast tubulin. *Eur. J. Cell Biol.,* 29 (1983), 121-5.

ROSSOUW, F. T., ROWBURY, R. J., Effects of the resistance plasmid R124 on the level of the OmpF outer membrane protein and on the response of *Escherichia coli* to environmental agents. *J. App. Bact.,* 56 (1984), 63-79.

ROWBURY, R. J., Methionine biosynthesis and its regulation. *Amino acids: Biosynthesis and Genetic Regulation,* ed. K. M. Hermann and R. L. Somerville. Reading, Mass.: Addison-Wesley, 1983, 191-212.

STRANGE, R. M., The molecular basis for the specificity of plant pathogenic microorganisms for their hosts. *Current Perspectives in Microbial Ecology,* ed. M. J. Klug and C. A. Reddy. Washington, D.C.: American Society for Microbiology, 1984, 208-16.
(with Holden, D.W.), Biochemical characteristics of sporelings of *Puccinia graminis* f.sp. *tritici* and protoplasts from wheat isolines of potential significance in specificity. *Plant Pathology,* 33 (1984), 233-43.
(with Strobel, G. A.), A toxin from *Phytophthora drechsleri* which kills protoplasts. *4th Int. Congr. Plant Pathology,* 776 (Abs.) (1983).

STRANGE, R. N., DAHIYA, J. S. (with Cooksey, C. J., Garratt, P. J.), Sucrose as a constitutive elicitor of phytoalexin synthesis. *4th Int. Congr. Plant Pathology,* 777 (Abs.) (1983).

WHITE, D. J. B., TAYLOR, K., Additions to the Flora of Blakeney Point, Norfolk — 3. *Trans. Norfolk and Norw. Nat. Soc.,* 26 (1984), 317-8.

WILKIE, D. (with Bruce, I. J.), Selective mitochondrial activity distinguishes aspirin from salicylate and benzoate in yeast cells. *Biochem. Pharmacol.,* 32 (1983), 2113-16.

CHEMISTRY

ALEXANDER, R. P., PATERSON, I., Alkene carbosulphenylation and carboselenylation: the use of allyltrimethylsilane and O-silylated enolates. *Tetrahedron Letters,* 24 (1983), 5911-14.

AL-OMRAN, FATIMA, RIDD, J. H., *ipso*-Attack in the nitration of aromatic amines. Pt 3. Evidence for two mechanisms of *ipso*-attack. *J. chem. Soc. Perkin II* (1983), 1185-90.

AMBROSE, D., PATEL, N. C., The correlation and estimation of vapour pressures. IV. Extrapolation of vapour pressures and estimation of critical pressures by the principle of corresponding states using two reference fluids with non-spherical molecules. *J. chem. Thermodynamics,* 16 (1984), 459-68.

ANDERSON, J. E., BARKEL, D. J. D., Hindered rotation in a 1-alkylnaphthalene. A dynamic nuclear magnetic resonance, difference nuclear Overhauser enhancement, and molecular mechanics investigation of 1-neopentylnaphthalene. The t-butyl group as a probe of chirality. *J. chem. Soc. Perkin II* (1984), 1053-7.

ASHCROFT, M. R., BOUGEARD, P., BURY, A., COOKSEY, C. J., JOHNSON, M. D., LAMPMAN, G. M. (with Hungerford, J. M.), Homolytic displacement at saturated carbon. Pt 9. The reactions of trichloromethanesulfonyl chloride with pent-4-enylcobaloximes and with olefins. A novel route to trichloroethylsulfolanes *via* an s_{Hi} mechanism. *J. org. Chem.,* 49 (1984), 1751-64.

ASPINALL, HELEN C., DEEMING, A. J., Synthesis and reactions of the di-μ-hydrido compound $[Mn_2H_2(CO)_4(Ph_2PCH_2PPh_2)_2]$. *J. chem. Soc. Chem. Comm.* (1983), 838-40.

ASPINALL, HELEN, C., DEEMING, A. J., DONOVAN-MTUNZI, SUSAN, Cyanide ion as a four-electron donating bridging ligand in a dimanganese compound. *J. chem. Soc. Dalton* (1983), 2669-71.

BABAN, JEHAN, A., ROBERTS, B. P., An e.s.r. study of amine-boryl radicals ($R_3\overset{+}{N}$-$BH_2^{\cdot}$) in solution. *J. chem. Soc. chem. Comm.* (1983), 1224-6.

BAMFORD, A. F., COOK, M. D., ROBERTS, B. P., Mechanism of the reaction of trialkylboranes with α-azidostyrene. *Tetrahedron Letters,* 24 (1983), 3779-82.

BANTHORPE, D. V., Transposizioni. *Encyclopaedia of Chemistry,* vol. 10, Florence: USES, 1983, 399-408.

BANTHORPE, D. V., BARROW, SUSAN E., Monoterpene biosynthesis in extracts from cultures of *Rosa damescena. Phytochemistry,* 22 (1983), 2727-8.

BANTHORPE, D. V., BARROW, SUSAN E., OSBORNE, M. J., Seasonally-dependent oxidative metabolism of terpenes in *Tanacetum vulgare. Z. Pflanzenphysiol.,* 111 (1983), 175-7.

BANTHORPE, D. V., BRANCH, STEPHANIE A., Monoterpenoids. *Specialist Periodical Report: Terpenoids and Steroids,* vol.12. London: The Royal Society of Chemistry, 1983, 3-74.

BANTHORPE, D. V., CHRISTOU, P. N., PINK, C. R., WATSON, D. G., Metabolism of linaloyl, neryl and geranyl pyrophosphates in *Artemisia annua. Phytochemistry,* 22 (1983), 2465-8.

BANTHORPE, D. V., EKUNDAYO, O., NJAR, V. C. O., Biosynthesis of chiral α- and β-pinenes in *Pinus* species. *Phytochemistry,* 23 (1984), 291-4.

BANTHORP, D. V., LONG, D. R. S., PINK, C. R., Biosynthesis of geraniol and related monoterpenes in *Pelargonium graveolens. Phytochemistry,* 22 (1983), 2459-63.

BANTHORPE, D. V., NJAR, V. C. O., Light-dependent monoterpene synthesis in *Pinus radiata* cultures. *Phytochemistry,* 23 (1984), 395-9.

BANTHROPE, D. V., OSBORN, M. J., Terpene epoxidases and epoxide hydratases from cultures of *Jasminum officinale. Phytochemistry,* 23 (1984), 905-7.

BARRETT, K. E., PEARCE, F. L., A comparison of histamine secretion from isolated peritoneal mast cells of the mouse and rat. *Int. Archs Allergy appl. Immun.,* 72 (1983), 234-8.

BARRETT, K. E., PEARCE, F. L., THOMPSON, H., Histamine secretion from mast cells stimulated with nerve growth factor. *Brit. J. Pharmacol.,* 81 (1984), 90P.

BILYARD, K. G., COOKSEY, C. J., GARRATT, P. J. (with Dahiya, J. S., Strange, R. N.), Two isoprenylated isoflavone phytoalexins from *Cajanus cajan. Phytochemistry,* 23 (1984), 871-3.

BLOODWORTH, A. J., COURTNEIDGE, J. L., DAVIES, A. G., Rate constants for the formation of oxiranes by γ-scission in secondary β-t-butylperoxyalkyl radicals. *J. chem. Soc. Perkin II* (1984), 523-7.

BLOODWORTH, A. J., COURTNEIDGE, J. L., EGGELTE, J. H., Oxygen-oxygen cleavage in bicyclic trialkylperoxonium intermediates. *J. chem. Soc. chem. Comm.* (1983), 1267-8.

BLOODWORTH, A. J., DAVIES, A. G., SAVVA, R. A., WINTER, J. N., An electron spin resonance study of the photolysis of bis(β-alkoxyalkyl)mercurials. *J. organometallic Chem.,* 253 (1983), 1-7.

BLOODWORTH, A. J., EGGELTE, H. J., Photolysis of saturated bicyclic peroxides. *Tetrahedron Letters,* 25 (1984), 1525-8.

Oxymetallation. Pt 18. Extensive rearrangement to a [4.2.1] skeleton in the bromodemercuriation of 2-bromomercurio-9-oxabicyclo[3.3.1]nonane. *J. chem. Soc. Perkin I* (1984), 1009-12.

BRAND, J. C., ROBERTS, B. P., An e.s.r. study of the gallane radical anion. *J. chem. Soc. chem. Comm.* (1984), 109-10.

CALLOMON, J. H., Sub-Doppler spectroscopy of benzene in the "channel-three" region: general discussion. *Faraday Discuss. chem. Soc.,* 75 (1983), 387-94.

(with Birkelund, Tove, Fürsich, F. T.), The stratigraphy of the upper Jurassic and Lower Cretaceous sediments of the Milne Land, central East Greenland. *Geol. Survey of Greenland, Bull.* 147 (1984), 56 pp.

(and others), The Lower Kimmeridge Clay at Westbury, Wiltshire, England. *Proc. geo. Ass.,* 94 (1983), 289-309.

CAMPBELL, J. R., CLARK, R. J. H., STEAD, M. J., Structure and bonding in linear-bridged species: electronic, Raman and resonance Raman spectra of the trinuclear dinitrogen-bridged complex $[\{Cl(PMe_2Ph)_4Re(N_2)\}_2MoCl_4]$. *J. chem. Soc. Dalton,* (1983), 2005-10.

CATLOW, C. R. A. (with Bendall, P. J., Corish, J., Jacobs, P. W. M.), Aggregation in anion excess fluorites. Pt II. *J. solid State Chem.,* 51 (1984), 159-69.

(with Bendall, P. J., Fender, B. E. F.), The defect structure of strontium chloride: II. Anion-excess heavily doped crystals. *J. Phys. C.,* 17 (1984), 797-809.

(with Chadwick, A. V., Corish, J.), Neutron diffraction study of anion excess fluorites. *Radiation Effects,* 75 (1983), 61-70.

(with Chadwick, A. V., Corish, J.), A neutron diffraction study of anion excess CaF_2. *J. solid State Chem.,* 48 (1983), 65-76.

(with Mackrodt, W. C.), Recent developments in simulation studies of ionic materials. *Solid State Ionics,* 8 (1983), 175-7.

(with Matar, S. F., Reau, J. M.), A quasi harmonic potential for Pb ion in PbF_2. *Solid State Ionics,* 9/10 (1983), 511-20.

(with Stoneham, A. M.), Ionicity in Solids, *J. Phys. C.,* 16 (1983), 4321-38.

(with Tasker, P. W.), The thermodynamics of mixed oxide reactor fuels. *Phil. Mag.,* 48 (1983), 649-59.

CATLOW, C. R. A., CORMACK, A. N. (with Gerhardt-Anderson, R., Zamani-Noor, F., Nowick, A. S.), Study of Sc_2O_3 doped CeO_2 by inelastic relaxation. *Solid State Ionics,* 9/10 (1983), 931-5.

(with Theobald, F.), Energy minimisation as a structural technique. *J. solid State Chem.,* 52 (1984), 91-9.

(with Theobald, F.), An energy minimisation study of the structures of transition metal oxides. *Acta Cryst., (B)* 40 (1984), 195-200.

CATLOW, C. R. A., MORONEY, L. M. (with Chadwick, A. V., Greaves, G. N.), The use of EXAFS in the study of defect clusters in doped CaF_2. *Radiation Effects,* 75 (1983), 159-63.

(with Chadwick, A. V., Greaves, G. N., Worboys, M. R.), An EXAFS study of the structure of rubidium polyethyleneoxide salt complexes. *Solid State Ionics,* 9/10 (1983), 1107-12.

CATLOW, C. R. A., PARKER, S. C., CORMACK, A. N., Prediction of mineral structures by energy minimisation techniques. *J. chem. Soc. chem. Comm.,* (1983), 936.

CHOTHIA, C., Principles that determine the structure of proteins. *Ann. rev. Biochem.,* 53 (1984), 537-72.

(with Lesk, A. M.), Mechanisms of domain closure in proteins. *J. mol. Biol.,* 174 (1984), 175-91.

CLARK, R. J. H., Titanio. *Encyclopaedia of Chemistry,* vol. 10, Florence: USES, 1983, 328-33.

Raman and resonance Raman spectroscopy of linear-chain complexes. *Advances in Infrared and Raman Spectroscopy,* vol. 11, ed. R. J. H. Clark and R. E. Hester. Chichester: Wiley, 1984, 92-132.

The classification of mixed-valence complexes as deduced by resonance Raman spectroscopy. *J. mol. Structure,* 113 (1984), 117-26.

Spectroscopic aspects of sulfur chemistry: electronic and resonance Raman spectroscopy of sulfur containing complexes, ions and radicals. *Sulfur, its Significance for Chemistry, for the Geo-, Bio-, and Cosmosphere and Technology,* ed. A. Müller and B. Krebs, *Studies in Inorganic Chemistry,* vol. 5. Amsterdam: Elsevier Science Publishers, 1984, 221-34.

Editor, *Topics in inorganic and General Chemistry,* vol. 19, *The Chemistry of Ruthenium,* by E. A. Seddon and K. R. Seddon. Amsterdam: Elsevier, 1984, xxxix + 1374 pp.

(with Hester, R. E.), Editors, *Advances in Infrared and Raman Spectroscopy,* vol. 11. Chichester: Wiley, 1984. xv + 383 pp.

CLARK, R. J. H., DINES, T. J., Resonance Raman spectroscopy of $[RuCl_6]^{2-}$ and $[RuBr_6]^{2-}$. Studies of the vibrational and electronic Raman effect. *Mol. Phys.,* 52 (1984), 859-70.

CLARK, R. J. H., DINES, T. J., KURMOO, M., On the nature of the sulfur chromophores in ultramarine blue, green, violet, and pink, and of the selenium chromophore in ultramarine selenium: characterization of radical anions by electronic and resonance Raman spectroscopy and the determination of their excited-state geometries. *Inorg. Chem.,* 22 (1983), 2766-72.

CLARK, R. J. H., DINES, T. J., PROUD, G. P., Studies of the electronic properties of the tetrathiotungstate(VI) ion, $[WS_2]^{2-}$, by low-temperature absorption and resonance Raman spectroscopy. *J. chem. Soc. Dalton* (1983), 2019-24.

Electronic, resonance Raman and infrared spectroscopic studies of the thiometalate complexes $[NEt_4]_2[(PhS)_2FeS_2MS_2]$, M = Mo or W. *J. chem. Soc. Dalton* (1983), 2299-302.

CLARK, R. J. H., FAIRCLOUGH, D. P., KURMOO, M., The electronic and resonance Raman spectroscopy of the inorganic transients S_2, S_3, and Se_2 stablilized in ultramarine. *Time Resolved Resonance Raman Spectroscopy,* ed. G. H. Atkinson. New York: Academic Press, 1983, 213-18.

CLARK, R. J. H., KURMOO, M. (with Galas, Anita M. R., Hursthouse, M. B.), The synthesis, X-ray crystal structure, and electronic and vibrational characterisation of the mixed-valence, iodine-bridged complex $[Pt^{II}(dien)I][Pt^{IV}(dien)I_3]I_2$. *J. chem. Soc. Dalton* (1983), 1583-6.

CLARK, R. J. H., STEAD, M. J. (and others), The Creutz-Taube complex revisited. *J. Amer. chem. Soc.,* 106 (1984), 121-3.

COOK, M. D., NG, LEE LEN, ROBERTS, B. P., Spin-trapping of α-azidoalkyl radicals. *Tetrahedron Letters,* 24 (1983), 3761-4.

COOKSEY, C. J. (and others), Quasiphosphonium intermediates — IV. Isolation and identification of intermediates in the Arbuzov and Perkow reactions of neopentyl esters of phosphorus(III) acids with α-halogenoacetophenones. *Tetrahedron,* 39 (1983), 4229-35.

CORMACK, A. N., A perfect lattice approach to nonstoichiometry. *Solid State Ionics,* 8 (1983), 187-92.

CORMACK, A. N., CATLOW, C. R. A. (with Tasker, P. W.), Long range ordering of extended defects in non-stochiometric oxides. *Radiation Effects,* 74 (1983), 237-44.

COURTNEIDGE, J. L., DAVIES, A. G., The electron spin resonance spectrum of the hexamethylbutadiene radical cation, and evidence for a new molecular rearrangement of acetylenes. *J. chem. Soc. chem. Comm.* (1984), 136.

Radicals and radical ions derived from 1,3-dienes. *Bull. Soc. chim. Belg.,* 93 (1984), 329-36.

(with Clark, T., Wilhelm, D.), the electron spin resonance spectrum of the biphenyl radical cation. *J. chem. Soc. Perkin II* (1984), 1197-1200.

(with Clark, T., Wilhelm, D.), The pentalene radical anion. *J. chem. Soc. chem. Comm.* (1984), 810-11.

(with Wilhelm, D., Clark, T., von Ragué Schleyer, P.), Reactions of polyanions derived from alkylbenzenes. *J. Amer. chem. Soc.,* 106 (1984), 361-7.

COURTNEIDGE, J. L., DAVIES, A. G., LUSZTYK, EWA, LUSZTYK, J., The electron spin resonance spectra of the [4]annulene (cyclobutadiene) radical cations, $R_4C_4^{+\cdot}$. *J. chem. Soc. Perkin II* (1984), 155-63.

COURTNEIDGE, J. L., DAVIES, A. G., LUSZTYK, J., Electronic effects in cyclobutadiene radical cations. *J. chem. Soc. chem. Comm.* (1983), 893-4.

COURTNEIDGE, J. L., DAVIES, A. G., PARKIN, J. E., Steric effects in substituted cyclobutadiene radical cations. *J. chem. Soc. chem. Comm.* (1983), 1262-4.

COURTNEIDGE, J. L., DAVIES, A. G., YAZDI, SAFIEH, N., Photolysis of pentamethylcyclopentadiene in the presence of trifluoroacetic acid: generation and e.s.r. spectrum of the pentamethylcyclopentadiene radical cation. *J. chem. Soc. chem. Comm.* (1984), 570-1.

DAVIES, A. G. (with Wilhelm, D., Clark, T., von Ragué Schleyer, P.), Ring opening of a bicyclo[3.3.0]octadienediyl dianion. *J. chem. Soc. chem. Comm.* (1984), 558-9.

DAVIES, A. G., GARRATT, P. J., Introduction. *Ann. Reports Prog. Chem.,* 79B (1982), 1-2.

DAVIES, A. G., HAWARI, J. A.-A., The electron spin resonance spectra and structures of organotin derivatives of 3,6-di-t-butyl-1,2-benzosemiquinone. *J. organometallic Chem.,* 251 (1983), 53-61.

(with Atkinson, J. M. Brindley, P. B.), An e.s.r. study of the photolysis of cyclopentadienylzirconium compounds. *J. organometallic Chem.,* 264 (1984), 253-61.

(with Brindley, P. B.), An esr study of the photolysis of dicyclopentadienyltitanium dichloride. *J. organometallic Chem.,* 250 (1983), 247-56.

(with Grignon-Dubois, Micheline, Pereyre, M.), An electron spin resonance study of the ring-opening of silyl-substituted cyclopropylmethyl radicals. *J. organometallic Chem.,* 255 (1984), 29-39.

(with Whitefield, M.), General and e.s.r. spectrum of the 1,8-dihydroxy-9-anthron-10-yl radicals. *Tetrahedron Letters,* 24 (1983), 4465-8.

DAVIES, A. G., HAWARI, J. A.-A., PAN, H.-D., Telomerization of poly(dialkyltin oxide) and alkane- or alkene-1,2-diols: the identification of cyclic derivatives of oligomeric dibutyltin oxide. *J. organometallic Chem.,* 251 (1983), 203-8.

DAVIES, A. G., PAN, H.-D., HAWARI, J. A.-A., The reaction of 1,3,2-dioxastannolans with diacyl chlorides: decarbonylation in the reaction with oxalyl chloride. *J. organometallic Chem.,* 256 (1983), 251-60.

DAVIES, A. G., PRICE, A. J., Five-coordinate complexes of 2,2-dibutyl-1,3,2-dioxastannolans. *J. organometallic Chem.,* 258 (1983), 7-13.

(with Dawes, Helen M., and Hursthouse, M. B.), The X-ray structure of 2,2-dibutyl-1,3,2-dioxastannolane. *J. organometallic Chem.,* 270 (1984), C1-C3.

DAVIES, ANN P., LEGON, A. C., MILLEN, D. J., ROBERTS, A. J., Microwave rotational spectrum, electric dipole moment and geometry of 2-bicyclo[3.1.0]-hexanone. *J. mol. Structure,* 112 (1984), 9-18.

DEEMING, A. J., Rearrangements, intramolecular exchanges, and isomerisations of organometallic compounds. *Mechanisms of Organometallic and Inorganic Reactions,* vol. 2, ed. M. Twigg. London: Plenum, 1984, 319-49.

Binding and rearrangements of small oxy-ligands at metal clusters. *J. mol. Catalysis,* 21 (1983), 25-34.

(with Aime, S.), Intramolecular nucleophilic attack at the α-carbon atom of a μ_3-alkynyl

(and others), Vibrational spectra of metal cluster complexes containing the μ_3-bridging sulphur ligand. *J. chem. Soc. Faraday Trans. 2,* 77 (1981), 1669-79.

DEEMING, A. J., MANNING, P. J., Studies on nucleophilic additions at bridging vinyl ligands in triosmium clusters. *J. organometallic Chem.,* 165 (1984), 87-94.

DOECKE, C. W., GARRATT, P. J., SHAHRIARI-ZAVAREH, H., ZAHLER, R., Strained aromatic systems. Synthesis of dicyclobuta[1,2:3,4]-naphthalenes, dicyclobuta[1,2:3,4]-anthracene and tricyclobutabenzene. *J. org. Chem.,* 49 (1984), 1412-17.

EWING, M. B., KIMPTON, SARAH K., McGLASHAN, M. L., Limited azeotropy in fluid (benzene + hexafluorobenzene). *J. chem. Thermodynamics,* 16 (1984), 669-71.

FILLERY-TRAVIS, ANNETTE, J., LEGON, A. C., WILLOUGHBY, L. C., Characterisation by rotational spectroscopy of a hydrogen-bonded dimer formed between H_2O and HCN. *Chem. Phys. Letters,* 98 (1983), 369-72.

(with Buckingham, A. D.), Rotational spectroscopy of ^{15}N-hydrogen cyanide dimer: detection, relative stability and D-nuclear quadrupole coupling of deuterated species. *Chem. Phys. Letters,* 102 (1983), 126-31.

GARRATT, P. J. (and others), Mills-Nixon effect, a resolution: clear evidence for no significant π-bond localization in small ring annelated aromatics. The synthesis and diatropicity of cyclobutane annelated dihydropyrenes. *J. Amer. chem. Soc.,* 106 (1984), 2431-2.

GILES, J. R. M., MARTI, V. P. J., ROBERTS, B. P., An e.s.r. study of the triborane(7) radical anion. *J. chem. Soc. chem. Comm.* (1983), 696-8.

GOODWIN, ELIZABETH J., LEGON, A. C., Microwave rotational spectrum of a weakly bound complex formed by hydrogen sulphide and hydrogen chloride. *J. chem. Soc. Faraday Trans. II,* 80 (1984), 51-65.

The rotational spectrum of the weakly bound molecular complex OC···HCN investigated by pulsed-nozzle, Fourier-transform microwave spectroscopy. *Chem. Phys.,* 87 (1984), 81-92.

HELSBY, P., RIDD, J. H., *ipso*-Attack in the nitration of aromatic amines. Pt 4. Rate profiles and isotope effects for the rearrangements of *ipso*-intermediates. *J. chem. Soc. Perkin II* (1983), 1191-5.

JOHNSON, M. D., Bimolecular homolytic displacement of transition-metal complexes from carbon. *Accounts Chem. Res.,* 16 (1984), 343-50.

(with Bochmann, R., Head, R. A.), Organometallic chemistry, Pt I. The transition elements. *Ann. reports Prog. Chem.,* 79B (1982), 239-56.

KISIEL, Z., LEGON, A. C., MILLEN, D. J., Potential constants for the hydrogen-bonded dimer H_2O···HF: directional character of the hydrogen bond. *J. mol. Structure,* 112 (1984), 1-8.

LEGON, A. C., Rotational spectroscopy and properties of hydrogen-bonded dimers. B···HA. *J. phys. Chem.,* 87 (1983), 2064-72.

Pulsed nozzle, Fourier-transform microwave spectroscopy of weakly bound dimers. *Ann. Rev. phys. Chem.,* 34 (1983), 275-300.

LEGON, A. C., WILLOUGHBY, L. C., The rotational spectrum and structure of the phosphine hydrogen cyanide complex. *Chem. Phys.,* 85 (1984), 443-50.

LEUNG, K. B. P., BARRETT, K. E., PEARCE, F. L., Differential effects of anti-allergic compounds on peritoneal mast cells of the rat, mouse and hamster. *Agents and Actions,* 14 (1984), 461-7.

LEUNG, K. B. P., PEARCE, F. L., A comparison of histamine secretion from peritoneal mast cells of the rat and hamster. *Brit. J. Pharmac.,* 81 (1984), 683-701.

LEWIS, G. V., CATLOW, C. R. A., Computer modelling of barium titanate. *Radiation Effects,* 73 (1983), 307-15.

LICHTIG, J., SOSA, MARTHA E., TOBE, M. L., Proton exchange and base-catalysed hydrolysis of the cations *trans*-dichloro[(*RSSR*)-1,4,8,11-tetra-azacyclotetradecane]-cobalt(III) and *cis*-dichloro[*RRRR*(*SSSS*)-1,4,8,11-tetra-azacyclotetradecane]-cobalt (III). *J. chem. Soc. Dalton* (1984), 581-5.

LIU, L. K., VERNON, C. A., The structure of secapin; a peptide from bee venom. *J. chem. Res(s),* (1984), 10-11.

MACCOLL, A. (with Bowen, R. D.), Low energy, low temperature mass spectra. I. — Selected derivative of *n*-octane. *Org. Mass Spectrom.,* 18 (1983), 576-81.

(with Bowen, R. D.), Products of low potential energy in mass spectra as a consequence of ion-dipole attractions: some neopentyl compounds. *J. chem. Soc. Perkin II* (1984), 1005-7.

MARTI, V. P. J., ROBERTS, B. P., An e.s.r. study of the diborane radical anion in solution. *J. chem. Soc. chem. Comm.* (1984), 272-4.

McGLASHAN, M. L., Current trends in precise calorimetry. *Thermochimica Acta,* 72 (1984), 55-70.

MILLEN, D. J., Vibrational spectra and vibrational states of simple gas-phase hydrogen-bonded dimers. *J. mol. Structure,* 100 (1983), 351-77.

Infrared and microwave spectroscopy of simple hydrogen-bonded dimers in gas-phase systems. *J. mol. Structure,* 113 (1984), 227-37.

(with Schrems, O.), Comparative infrared study of hydrogen-bonded heterodimers formed by HCl, DCl, HF and DF with $(CH_3)_2O$, CH_3OH and $(CH_3)_3COH$ in the gas phase. Assignment of vibrational band structure in $(CH_3)_2O\cdots HCl$. *Chem. Phys. Letters,* 101 (1983), 320-5.

MRUZEK, MARGARET (and others), Differences in the activity of two commercially available preparations of cyclophosphamide. *Human Toxicology,* 2 (1983), 557-8.

MRUZEK, MARGARET N., SHAW, I. C., A mass spectral study of cyclophosphamide with special reference to differences in isomeric structures. *Biomed. Mass Spectrom.,* 11 (1984), 360-6.

PARKER, S. C., CATLOW, C. R. A., CORMACK, A. N., Structure prediction in silicates. *Acta Cryst.,* (B), 40 (1984), 200-8.

PATERSON, I., PATEL, S. K., PORTER, J. R., Studies in macrolide synthesis: an efficient synthesis of two chiral fragments of erythronolide A. *Tetrahedron Letters,* 24 (1983), 3395-6.

PEACHELL, P. T., PEARCE, F. L., Some studies on the release of histamine from mast cells treated with polymyxin. *Agents and Actions,* 14 (1984), 379-85.

PEARCE, F. L., Is disodium cromoglycate a mast cell stabilizing drug? *Trends pharmacol. Sci.,* 5 (1984), 5.

Die Stimulus-Sekretions-Kopplung in der Mastzelle. *Allergologie,* 7 (1984), 27-9.

The mast cell in health and disease. 2. Histamine secretion from mast cells and the action of antiallergic drugs. *Hospital Update,* 10 (1984), 25-31.

(and others), Mast cell heterogeneity. *Monogr. Allergy,* 18 (1983), 124-8.

PEARCE, F. L., CLEMENTS, J., ENNIS, M., PEACHELL, P. T., TRUNEH, A., WHITE, J. R., Do anti-allergic agents prevent histamine release from mast cells by acting on receptor-mediated calcium channels? *Monogr. Allergy,* 18 (1983), 220-2.

PEARCE, F. L., VERNON, C. A. (with Kemeny, D. M., Dalton, N., Lawrence, A. J.), The purification and characterisation of hyaluronidase from the venom of the honey bee, *Apis mellifera. Eur. J. Biochem.,* 139 (1984), 217-23.

PEARCE, F. L., WHITE, J. R., Calcium efflux and histamine secretion from rat peritoneal mast cells. *Agents and Actions,* 14 (1984), 392-6.

ROBERTS, B. P., Comments on the structures of phosphoranyl radicals. *Tetrahedron Letters,* 24 (1983), 3377-80.

Radicals centred on sulfur, phosphorus and other heteroatoms. *Radical reaction rates in liquids,* ed. H. Fischer. New York: Springer-Verlag, 1983, 271-338.

SANDERS, M. J., CATLOW, C. R. A., The cation distribution in faujasites. *Proc. 6th Int. Conf. on Zeolites* (Reno, USA, July 1984), 96-105.

SHARMA, V. K., SHAHRIARI-ZAVAREH, H., GARRATT, P. J., SONDHEIMER, F., Syntheses of 2-carbomethoxy-5,10-dimethyl-6,8-*bis*dehydro[13]-annulenone, a potential precursor of macrocyclic azulene analogues, and (*Z*)- and (*E*)-14-carbethoxy-2-carbomethoxy-5,10-dimethyl-6,8-bisdehydro[13]-fulvenes. *J. org. Chem.,* 48 (1983), 2379-83.

STIDDARD, M. H. B., The perfection of <111>-oriented crystallites of aluminium. *J. Materials Sci. Letters,* 2 (1983), 341-4.

Epitaxy of antimony on lead sulphide {001}. *J. Materials Sci. Letters,* 3 (1984), 145-8.

TAYLOR, M. D., THIRUNAMACHANDRAN, T., Discriminatory interactions between chiral molecules in the presence of an intense radiation field. *Mol. Phys.,* 49 (1983), 881-91.

THIRUNAMACHANDRAN, T. (with Power, E. A.), Quantum electrodynamics with nonrelativistic sources. I. Transformation to the multipolar formalism for second-quantized electron and Maxwell interacting fields. *Phys. Rev. A,* 28 (1983), 2649-62.

(with Power, E. A.), Quantum electrodynamics with nonrelativistic sources. II. Maxwell fields in the vicinity of a molecule. *Phys. Rev. A,* 28 (1983), 2663-70.

(with Power, E. A.), Quantum electrodynamics with nonrelativistic sources. III. Intermolecular interactions. *Phys. Rev. A,* 28 (1983), 2671-5.

TOBE, M. L., Base hydrolysis of transition-metal complexes. *Advances in Inorganic and Bioinorganic Mechanisms,* vol. 2, ed. A. G. Sykes. London: Academic Press, 1983, 1-94.

(with Lanza, S., Minniti, D., Romeo, R.), Mutual labilization of dimethyl sulfoxide in the *bis*(dimethyl sulfoxide)(1,2-diaminoethane)platinum(II) cation. *Inorg. Chem.,* 22 (1983), 2006-10.

(and others), Dissociative substitution in four co-ordinate planar platinum(II) complexes. The kinetics of sulphoxide exchange and its displacement by bidentate ligands in the reactions of *cis*-di(aryl)*bis*(dimethyl sulphoxide)platinum(II) in chloroform and benzene. *J. chem. Soc. chem. Comm.,* (1984), 542-3.

TOBE, M. L., CHATTERJEE, C., COOKSEY, C. J., The crystal and molecular structure of an isomer of bromo[1,9-*bis*(2-pyridyl)2,5,8-triazanonane]cobalt(III), perchlorate, [Co(*picdien*)Br]$(ClO_4)_2$ and that of an isomer of nitro[1,9-*bis*(2-pyridyl)2,5,8-triazanonane]cobalt(III), perchlorate, [Co(*picdien*)(NO_2)]$(ClO_4)_2$. *Inorg. chim. Acta,* 75 (1983), 93-101.

TRUNEH, A., PEARCE, F. L., Effect of cyclic AMP, disodium cromoglycate and other anti-allergic drugs on histamine secretion from rat mast cells stimulated with the calcium ionophore ionomycin. *Agents and Actions,* 14 (1984), 179-84.

VERNON, C. A., On the catalytic factors involved in the mechanism of aspartate aminotransferase. *Biochem. Soc. Trans.,* (1984), 420-1.

VERNON, C. A., WARNER, J. A. (with Banks, B. E. C.), Nerve growth factor has anti-inflammatory activity in the rat hindpaw oedema test. *Neuroscience Letts.,* 47 (1984), 41-5.

WALMSLEY, S. H. (with Dissado, L. A.), Exciton band structure and excimer formation. *Organic molecular aggregates,* ed. P. Reineker, H. Haken and G.C. Wolf. Berlin: Springer-Verlag, 1983. 145-8.

(with Dissado, L. A.), Exciton induced lattice distortion and excimer formation. *Chem. Phys.,* 86 (1984), 375-87.

WEBB, JUDITH, K., BANTHORPE, D. V., WATSON, D. G., Monoterpene syntheses in shoots regenerated from callus cultures. *Phytochemistry,* 23 (1984), 903-4.

WHITE, J. R., PEARCE, F. L., Effect of anti-allergic and cyclic AMP-active drugs on histamine secretion from rat mast cells treated with the novel calcium ionophore chlortetracycline. *Int. Archs Allergy appl. Immun.,* 71 (1983), 352-6.

Use of chlortetracycline to monitor calcium mobilization during histamine secretion from the mast cell: a cautionary note. *Anal. Biochem.,* 132 (1983), 1-5.

WILLOUGHBY, L. C., LEGON, A. C., Rotational spectrum and structure of a hydrogen-bonded dimer of phosphine with hydrogen bromide. *J. phys. Chem.,* 87 (1983), 2085-90.

WOLF, M. L., Observation of solitary-wave conduction in a molecular dynamics simulation of the superionic conductor Li_3N. *J. Phys. C: Solid State Phys.,* 17 (1984), L285-8.

WOLF, M. L., WALKER, J. R., CATLOW, C. R. A., Structural and transport properties of β''-Al_2O_3. *Solid State Ionics,* 13 (1984), 33-8.

COMPUTER SCIENCE

COLE, R. H., User experience and evaluation of International X25 services. *Proc. Business Telecom Conf., Online, London, March 1984.*

COLE, R., LLOYD, P., A flexible architecture for protocol studies in a multi-network environment. *Proc. IFIP83 Conf.,* Amsterdam: North-Holland, 1983, 401-6.

CROWCROFT, J., HALL, R., A distributed approach to loading in a networked environment. *Proc. IFIP WG6.4 Int. Workshop on Ring Technology, Canterbury* (September 1983), 1-12.

EDGE, S. W., An adaptive timeout algorithm for retransmission across a packet switching network. *Proc. ACM SIGCOMM '84, Quebec, June 1984, Comp. Comm. Rev.,* 14, No.2 (1984).

KILLE, S. E., The interconnection of network mail systems. *IERE Conf. on Networks and Electronic Office Systems, Reading* (September 1983), 21-8.

Integration of conferencing and electronic mail. *IFIP WG6.5 Working Conference, Nottingham* (May 1984), 259-67.

Editor, *JNT Mail Protocol* (revision 1.0). Joint Network Team, Rutherford Appleton Laboratory, March 1984. 98 pp.

KIRSTEIN, P. T., Some experiences with packet switched satellite computer networks. *Proc. EUTECO,* Amsterdam: Elsevier, (1983), 383-93.

The role and impact of Service Agents in networks for office automation systems. *Conf. Networks and Electronic Office Systems, September 1983.* London: IERE, 1-6.

The interconnection of mail systems in the light of current CCITT recommendations. *Proc. IFIP Conf. Computer Message Services, Nottingham, May 1984.* Amsterdam: North Holland, 1984, 227-33.

Mixed text and graphics in distributed systems. *Symp. Local Area Networks IEE, London May 1984.* London: IEE, 8/1-8/4.

LEUNG, C. H. C., A model for disc locality referencing. *Computer J.,* 26, No. 3 (1983), 196-8.

(with Choo, Q. H.), On the execution of large batch programs in unreliable computing systems. *IEEE Trans. on Software Engng,* SE-10, No. 4 (1984), 444-50.

LLOYD, P., CROWCROFT, J., Routing issues in internetworking local area networks. *Proc. Networks 84, Online, London, July 1984,* 217-30.

TUCK, W. (with Rout, P.), Business applications of Project Universe. *Proc. Networks 84, Online, London, July 1984,* 1-14.

WILBUR, S. R., Aspects of distributed systems management. *Ring Technology Local Area Networks,* ed. I. Dallas and E. B. Spratt. Amsterdam: North-Holland, 1984, 123-32.

WILBUR, S. R., KIRSTEIN, P. T., Project Universe — lessons for the 1990s. *Wired Society.* Maidenhead: Pergamon Infotech, 1983, 35-47.

WINFIELD, R., Document transfer by satellite. *Aslib Proc.,* 36, no. 4 (1984), 177-85.

(with Cronin, B.), Multi-media document systems. *New Library World,* 84, no. 1002 (1983), 201-2.

WINFIELD, R., DANIEL, T., HALL, R., Network management in a distributed service environment. *Proc. Europ. Computer Communications Conf., Networks 84, Online, London, July 1984.* 545-59.

GEOLOGY

AUDLEY-CHARLES, M. G., Comments on 'Analogous tectonic evolution of the Ordovician foredeeps, southern and central Appalachians'. *Geology,* 11 (1983), 490-3.

Discussions of 'Mechanisms of crustal deformation' by D. L. Turcotte. *J. geol. Soc. Lond.,* 140 (1983), 722-4.

Reconstruction of eastern Gondwanaland. *Nature,* 306 (1983), 48-50.

BANNER, F. T., Essay review of 'Neogene planktonic foraminifera: a phylogenetic atlas' by J. P. Kennett and M. S. Srinavasan. *J. Foram. Res.,* 14 (1984), 151-3.

(with Alexander, S. P.), The functional relationship between skeleton and cytoplasm in *Haynesina germanica* (Ehrenberg). *J. Foram. Res.,* 14 (1984), 159-70.

BENMORE, R. A., McARTHUR, J. M. (with Coleman, M. L.), Carbon and oxygen isotopic composition of phosphorite. *Proc. 4th Int. Field Workshop and Seminar on Phosphorites, Udaipur, India, November 1981,* 1984, 39-51.

HALL, R., Ophiolites: figments of oceanic lithosphere. *Ophiolites and Oceanic Lithosphere,* ed. I. G. Gass, S. J. Lippard and A. W. Shelton. *Geol. Soc. London Spec. Pub.,* 13 (1984), 393-403.

HALL, R., AUDLEY-CHARLES, M. G., The structure and significance of the Talea Ori, Crete. *J. Structural Geol.,* 5 (1983), 167-79.

(with Carter, D. J.), The significance of Crete for the evolution of the eastern Mediterranean. *Geol. Soc. London Spec. Pub.,* 15 (1984), 267-84.

JONES, E. J. W. (with Ramsay, A. T. S.), Volcanic ash deposits of early Eocene age from the Rockall Trough. *Nature,* 299 (1982), 342-4.

(with White, R. S., Hughes, V. J., Matthews, D. H.), Crustal structure from two-ship multichannel seismic profiles on the continental shelf off Northwest Scotland. *Tectonophysics,* 90 (1982), 167-8.

KIRK, WENDY L., MASON, R., Facing of structures in the Furulund Group, Sulitjelma, Norway. *Proc. Geol. Assoc.,* 95 (1984), 43-50.

MILLEDGE, H. JUDITH (and others), Type dependent variations in the isotopic composition of diamonds. *Terra Cognita,* 3 (1983), 125.

MILSOM, J., Gravity field of the Marum Ophiolite complex, Papua New Guinea. *Ophiolites and Oceanic Lithosphere,* ed. I. G. Gass, S. J. Lippard and A. W. Shelton. *Geol. Soc. London Spec. Pub.,* 13 (1984), 351-8.

Use of appropriate scales in the preparation of initial 2-D gravity models. *First Break,* 2, (5) (1984), 23-5.

MILSOM, J., AUDLEY-CHARLES, M. G. (with Barber, A. J., Carter, D. J.), Geological-geophysical paradoxes of the eastern Indonesian collision zone. Geodynamics of the Western Pacific — Indonesian region. *Amer. Geophys. Union Geodyn. Ser.,* 11 (1983), 401-11.

MOUTZOURIDES, S. G., Growth line structure in bivalves. *La Conchiglia,* 15 (1984), 6-8.

PARK, SE-MOON, On *Ogmoconcha eocontractula* Park *sp. nov. A Stereo-Atlas of Ostracod Shells,* 11 (1984), 67-70.

PRICE, G. D., Polytypism and the factors determining the stability of spinelloid structures. *Physics and Chemistry of Minerals,* 10 (1983), 77-83.

The nature and significance of stacking faults in wadsleyite, natural beta-$(Mg,Fe)_2SiO_4$ from the Peace River meteorite. *Physics of the Earth and Planetary Interiors,* 33 (1983), 137-47.

(with Angel, R. J., Putnis, A.), A mechanism for pyroxene-pyroxenoid and pyroxenoid-pyroxenoid transformations. *Physics and Chemistry of Minerals,* 10 (1984), 236-43.

(with Parker, S. C.), Computer simulations of the structural and physical properties of the olivine and spinel polymorphs of Mg_2SiO_4. *Physics and Chemistry of Minerals,* 10 (1984), 209-16.

PRICE, N. J., AUDLEY-CHARLES, M. G., Plate rupture by hydraulic fracture resulting in overthrusting. *Nature,* 306 (1983), 572-5.

RAWSON, P. F., The Valanginian-Aptian stages: current definitions and outstanding problems. *Zitteliana,* 10 (1983), 493-500.

(with Mutterlose, J.), Stratigraphy of the Lower B and basal Cement Beds (Barremian) of the Speeton Clay, Yorkshire, England. *Proc. Geol. Assoc.,* 94 (1983), 133-46.

ROBINSON, J. E., *London — Illustrated Geological Walks, Book One.* Edinburgh: Scottish Academic Press, 1984. 112 pp.

Marie Stopes and coal balls. *The UCL Bulletin,* 6 (1983), 1-4.

A victim of change. *Stone Industries,* 19 (1984), 31.

(with Keen, D. H., Jones, R. L.), A late Devensian and Early Flandrian fauna and flora from Kildale, north east Yorkshire. *Proc. Yorks. Geol. Soc.,* 44 (1984), 385-97.

(with Worsley, P., Coope, G. R., Holyoak, D. T.), A Pleistocene succession from beneath the Chelford Sands at Oakwood Quarry Chelford, Cheshire. *Geol. J.,* 18 (1983), 307-27.

(and others), Evidence of two temperate episodes in late Pleistocene deposits at Marsworth, U.K. *Nature,* 309 (1984), 778-81.

WELLS, M. K., Reviews of the following: W. S. MacKenzie, C. H. Donaldson and C. Guildford, *Atlas of Igneous Rocks and their Textures. Min. Mag.,* 47 (1983), 569.

H. Williams, F. J. Turner and C. M. Gilbert, *Petrography: An Introduction to the Study of Rocks in Thin Sections,* 2nd ed. *Ibid.,* 569-70.

HISTORY AND PHILOSOPHY OF SCIENCE

MAXWELL, N., *From Knowledge to Wisdom: A Revolution in the Aims and Methods of Science.* Oxford and New York: Blackwell, 1984. viii + 299 pp.

SMEATON, W. A., Pierre Joseph Macquer: early attempts to melt platinum. *Platinum Metals Rev.,* 28 (1984), 25-30.

Torbern Olof Bergman: from natural history to quantitative chemistry. *Endeavour,* 8 (1984), 71-4.

BOSANQUET, L. S.(the late), Convergence and summability factors in a sequence (II). *Mathematika,* 30 (1983), 255-73.

BROWN, S. N., STEWARTSON, K., On an integral equation of marginal separation. *SIAM J. Appl. Math.,* 43 (1983), 1119-26.

Inviscid centre-modes and wall-modes in the stability theory of swirling Poiseuille flow. *IMA J. Appl. Math.,* 32 (1984), 311-33.

(with Cebeci, T.), Non-similar boundary layers on the leeside on cones at incidence. *Computers and Fluids,* 11 (1983), 175-86.

COWLEY, S. J., On wavetrains associated with elastic jumps on fluid-filled elastic tubes. *Q.J. Mech. Appl. Math.,* 36 (1983), 289-312.

Computer extension and analytic continuation of Blasius' expansion for impulsive flow past a circular cylinder. *J. Fluid Mech.,* 135 (1983), 389-405.

(with Elliott, J. W., Smith, F. T.), Breakdown of boundary layers: (i) on moving surfaces; (ii) in semi-similar unsteady flows; (iii) in fully unsteady flow. *Geophys. Astrophys. Fluid Dyn.* 25 (1983), 77-138.

(with Davis, S. H.), Viscous thermo-capillary convection at high Maragoni number. *J. Fluid Mech.,* 135 (1983), 175-88.

DAVIS, A. M. J., Force and torque formulae for a sphere moving in an axisymmetric Stokes flow with finite boundaries: asymmetric stokeslets near a hole in a plane wall. *Int. J. Multiphase Flow,* 9 (1983), 573-608.

The small Reynolds number expansion of the n-dimensional drag coefficient. *ZAMP,* 34 (1983), 935-42.

The scattering by a dielectric spheroid of an electromagnetic surface wave travelling along a duct. *Proc. Roy. Soc. Lond.,* A, 391 (1984), 181-99.

HAYES, A. C., LARMAN, D. G., The vertices of the knapsack polytope. *Discrete Appl. Math.,* 6 (1983), 135-8.

HIDE, R., On the dynamics of rotating fluids and planetary atmospheres: a summary of some recent work. *Predictability of fluid motions,* ed. G. Holloway and B. J. West. New York: American Institute of Physics, 1984, 79-85.

On the unconscious significance of the number thirty-one. *Inter. Rev. Psycho-Analysis,* 11 (1984), 119-20.

(with James, I. N.), Differential rotation produced by large-scale potential vorticity mixing in a rapidly-rotating fluid. *Geophys. J. Roy. Astron. Soc.,* 74 (1983), 301-12.

(with Read, P. L.), Sloping convection in the laboratory and in the atmospheres of Jupiter and Saturn. *Ann. Geophysicae,* 1 (1983), 135-7.

(with Read, P. L.), An isolated baroclinic eddy as a laboratory analogue of the Great Red Spot on Jupiter. *Nature,* 308 (1984), 45-8.

HOCKING, L. M., Dynamic problems associated with moving fluid interfaces. *Fluid Dynamics Trans.,* 11 (1983), 127-62.

JAYNE, J. E., ROGERS, C. A., Borel selectors for upper semi-continuous multi-valued functions. *J. Funct. Anal.,* 56 (1984), 279-99.

Sélections boréliennes de multi-applications semi-continues supérieurment. *C.R. Acad. Sci., Sér* I, 299 (1984), 125-8.

(with Hansell, R. W.), K-analytic sets. *Mathematika,* 30 (1983), 189-221.

(with Hansell, R. W.), K-analytic sets: corrigenda et addenda. *Mathematika,* 31 (1984), 28-32.

JOHNSON, E. R. (and others), Blood usage in transfusion-dependent patients — a theoretical model. *Transfusion,* 24 (1984), 74-9.

KHAN, M. A., STEWARTSON, K. (the late), On natural convection from a cooling sheet. *Q.J. Mech. Appl. Math.,* 37 (1984), 325-38.

LARMAN, D. G., ROGERS, C. A., Hyman Kestelman, obituary. *Bull. London Math. Soc.,* 16 (1984), 307-9.

MANN, C. D., Curve interpolation and folded strata. *Tectonophysics,* 88 (1982), T7-15.

McMULLEN, P., Weakly continuous valuations on convex polytopes. *Arch. Math.,* 41 (1983), 555-64.

Determinants of lattices induced by rational subspaces. *Bull. London Math. Soc.,* 16 (1984), 275-7.

Volumes of projections of unit cubes. *Ibid.,* 278-80.

The Hausdorff distance between compact convex sets. *Mathematika,* 31, (1984), 76-82.

(with Schneider, R.), Valuations on convex bodies. *Convexity and its Applications,* ed. P. M. Gruber and J. M. Wills. Basel: Kirkhaüser, 1983, 170-240.

(with Schulz, C., Wills, J. M.), Polyhedral 2-manifolds in E^3 with unusually large genus. *Israel J. Math.,* 46 (1983), 127-44.

MICHAEL, D. H. (with Collins, R., Mirshekar-Syahkal, D.), Surface current distributions around surface flaws in metals. *Proc. Roy. Soc. Lond.,* A, 393 (1984), 159-70.

MITCHELL, J. R., Single-photon processes between Landau levels in non-relativistic quantum electrodynamics. *J. Phys.,* B, 16 (1983), 4153-63.

O'NEILL, M. E., On angles of separation in Stokes flows. *J. Fluid Mech.,* 133 (1983), 427-42.

(with Ranger, K. B.), The approach of a sphere to an interface. *Phys. of Fluids,* 26 (1983), 2035-42.

POWER, E. A., Zero-point energy and Lamb shift. *Concepts of Quantum Optics,* ed. P. L. Knight and L. Allen. London: Pergamon, 1983, 118-22.

(with Meath, W. J.), On the effects of diagonal dipole matrix elements in multiphoton resonance profiles using two-level systems as models. *Mol. Phys.,* 51 (1984), 585-600.

(with Meath, W. J.), On the importance of permanent moments in the multiphoton absorption using perturbation theory. *J. Phys.,* B, 17 (1984), 763-81.

(with Thirunamachandran, T.), Maxwell's equations and the multipolar Hamiltonian. *Phys. Rev.,* A, 26 (1982), 1800-1.

(with Thirunamachandran, T.), Energy of a dipole near a plane metal surface. *Amer. J. Phys.,* 50 (1982), 757.

(with Thirunamachandran, T.), Quantum electrodynamics with non-relativistic sources, I: Transformation to the multipolar formalism for second-quantized electron and Maxwell interacting fields. *Phys. Rev.,* A, 28 (1983), 2649-62.

(with Thirunamachandran, T.), Quantum electrodynamics with non-relativistic sources, II: Maxwell fields in the vicinity of a molecule. *Phys. Rev.,* A, 28 (1983), 2663-70.

(with Thirunamachandran, T.), Quantum electrodynamics with non-relativistic sources, III: Intermolecular interactions. *Phys. Rev.,* A, 28 (1983), 2671-5.

ROGERS, C. A., Lattices in Banach spaces. *Coxeter-Festschrift,* III, ed. D. Gaier and G. Pickert, Giesen: Math. Instituts, 1984, 155-67.

(with Johnson, R. A.), Hausdorff measure and local measure, II. *J. Lond. Math. Soc.,* (2), 29 (1984), 67-80.

STEWARTSON, K. (the late), On mass flux through a torus in Stokes flow. *J. Appl. Math. Phys.* 34 (1983), 567-74.

(with Cebeci, T.), On the calculation of separation bubbles. *J. Fluid Mech.,* 133 (1983), 287-96.

(with Cebeci, T.), Spatial amplification and Squire's theorem. *Arch. Mech.,* 34 (1982), 175-84.

(with Cebeci, T., Whitelaw, J. H.), Calculation of two-dimensional flow past airfoils. *Numerical and Physical Aspects of Aerodynamic Flows,* II, ed. T. Cebeci. New York: Springer-Verlag, 1983, 3-42.

(with Williams, J. C.), Flow developments in the vicinity of the sharp trailing edge on bodies impulsively set in motion, Pt 2. *J. Fluid Mech.,* 131 (1983) 177-94.

(and others), A novel property of the displacement thickness in three-dimensional boundary layer theory. *Phys. of Fluids,* 26 (1983), 1192-7.

WATSON, G. L., One-class genera of positive quadratic forms in seven variables. *Proc. Lond. Math. Soc.,* (3), 48 (1984), 175-92.

PHYSICS AND ASTRONOMY

AITKEN, D. K., ROCHE, P. F., Infrared spectroscopy of evolved objects. *'Galactic and Extragalactic Infrared Spectroscopy', Proc. XVIth ESLAB Symp., Toledo, 6-8 Dec. 1982,* ed. M. F. Kessler and J. P. Phillips. Dordrecht: Reidel, 1984, 331-48.

AITKEN, D. K., ROCHE, P. F. (with Phillips, M. M.), 8 — 13μm spectrophotometry of galaxies — I. Galaxies with giant HII region nuclei. *Mon. Not. R. astr. Soc.,* 207 (1984), 25-33.

ALLINGTON-SMITH, J. R., Quasars in the 1-Jy radio sample. *'Quasars and Gravitational Lenses', Proc. 24th Liège Astrophys. Colloq., June 21-24, 1983,* Liège: Université de Liège, 1983, 267-71.

ASA'D, Z., COUPLAND, M., DAVIS, D. G., DUFF, B. G., FEARNLEY, T. A., GJERPE, I., HEYMANN, F. F., IMRIE, D. C., LOWNDES, R., LUSH, G. J., PHILLIPS, M. H. (and others), New results of Kaon-Proton scattering at large momentum transfers. *Physics Lett.* B, 123 (1983), 265-8.

ASA'D, Z., COUPLAND, M., DAVIS, D. G., DUFF, B. G., FEARNLEY, T. A., GJERPE, I., HEYMANN, F. F., IMRIE, D. C., LUSH, G. J., PHILLIPS, M. H., (and others), Proton-Proton elastic scattering at 50 GeV/c incident momentum in the momentum transfer range $0.8 < -t < 4.0$ (GeV/c)^2. *Physics Lett.,* B, 128 (1983), 124-8.

(and others), $\bar{p}p$ elastic scattering at 30 GeV/c incident momentum in the momentum transfer range $0.5 < -t < 5.8$ (GeV/c)^2. *Physics Lett.,* B, 130 (1983), 335-9.

AZEMOON, T., BARTLEY, J. H., BULLOCK, F. W., FITCH, P. J., LEIGHTON-DAVIES, S. M., SANSUM, R. A. (and others), Observation of coherent diffractive charged current interactions of antineutrinos on Neon nuclei. *Physics Lett.,* B, 140 (1984), 137-41.

AZEMOON, T., BARTLEY, J. H., BULLOCK, F. W., LEIGHTON-DAVIES, S. M. (and others), A study of μe events produced in antineutrino interactions. *Z. Phys.,* C, 27 (1984), 307-13.

AZEMOON, T., BARTLEY, J. H., BULLOCK, F. W., PARKER, M. A. (and others), A comparison of charged current cross-sections and structure functions for neutrino and antineutrino beams on Hydrogen and Neon. *Nucl. Phys.,* B, 232 (1984), 1-20.

BAINES, D. W. T., WHITTET, D. C. B., Anomalous diffuse features in dust-embedded stars. *Mon. Not. R. astr. Soc.,* 203 (1983), 419-31.

(with Whitelock, P. A., Carter, B. S., Roberts, G.), The 1980/81 shell event in AG Carinae. *Mon. Not. R. astr. Soc.,* 205 (1983), 577-84.

BARLOW, M. J., ADAMS, S., SEATON, M. J., WILLIS, A. J. (with Walker, A.), Nebular abundances and central star temperatures for B planetary nebulae in the Magellanic Clouds. *Proc. IAU Symp. No. 103, 'Planetary Nebulae',* ed. D. R. Flower. Dordrecht: Reidel, 1983, 538.

BAYES, F. A., Calculation of collision strengths for fine-structure transitions in the spectra of rare gas atoms. *Electronic and Atomic Collisions, XIIIth Int. Conf., Berlin 1983. Abstracts of Contributed Papers,* ed. J. Eichler et al. Berlin: Int. Conf. Physics Elec. Atomic Coll., 1983, 741.

BELING, C. D. (with Smith, F. A.), The enhancement of positronium yields by the hydroxide ion in the radiolysis of water. *Radiat. Phys. & Chem.,* 23 (1984), 571-7.

BELL BURNELL, S. J., CHIAPPETTI, L., A catalogue of X-ray spectra observed with the Ariel V proportional counter (experiment C). *Astron. and Astrophys. Suppl. Ser.,* 56 (1984), 415-39.

BENTLEY, R. D. (and others), SMM flat crystal spectrometer data analysis of 7 April 1980 flare. *Proc. 11th Regional Consultation on Solar Physics, Debrecen, Hungary, Vol 5, Pt 1,* ed. L. Dezso and B. Kalman. Budapest: Academy of Sciences, 1983, 85-92.

BORRILL, P. L., Why is interconnection important to good system design? *Proc. Conf. Interconnection 1984,* New York: IEEE, 1984, 1-10.

The P896 Futurebus. *Proc. IEEE Compcon Spring Conf., 27 Feb.-1 Mar. 1984, San Francisco. IEEE Cat. No. 84CH2017-2,* New York: IEEE, 1984.

BRANDUARDI-RAYMONT, G., CHIAPPETTI, L., ERCAN, E. N., The X-ray spectrum of Cyg X-2. *Astron. Astrophys.,* 130 (1984), 175-8.

BRANDUARDI-RAYMONT, G., CORBET, R. H. D., MASON, K. O., PARMAR, A. N. (and others), Optical and X-ray observations of 2S0921-630. *Mon. Not. R. astr. Soc.,* 205 (1983), 403-16.

BUTLER, K., MENDOZA, C., Photoionization cross section of the ground state of neutral sodium. *J. Phys.,* B, 17 (1983), L707-11.

Collisional excitation rates for transitions between the fine structure levels of the ground term of Ne^{2+}. *Mon. Not. R. astr. Soc.,* 208 (1984), 17P-23P.

BUTLER, K., MENDOZA, C. (with Zeippen, C. J.), Oscillator strengths and photoionization cross sections for positive ions in the sodium isoelectric sequence. *J. Phys.,* B, 17 (1984), 2039.

BUTLER, K., MOORES, D. L., Electron impact ionisation of Boron-like ions. *Electronic and Atomic Collisions, XIIIth Int. Conf., Berlin 1983. Abstr. Contributed Papers,* ed. J. Eichler et al. Berlin: Int. Conf. Physics Elec. Atomic Coll., 1983, 203.

CASTILLEJO, L., GOLDHABER, A. S., JACKSON, A. D. (with Johnson, M. B.), Is the anomalon a dinotor? *Proc. 6th High Energy Heavy-Ion Study and 2nd Workshop on Anomalons. LBC-16281. Conf-830675,* Berkeley, California: Lawrence Berkeley Laboratory, 1983, 97-110.

CHARLTON, M., Intense slow positron beams — an evaluation of the methods. *Proc. NATO Advanced Research Workshop on 'Positron Scattering in Gases',* ed. J. W. Humberston and M. R. C. McDowell. New York: Plenum Press, 1984, 53-63.

CHARLTON, M., CLARK, G., GRIFFITH, T. C., HEYLAND, G. R., Positronium formation cross sections in the inert gases. *J. Phys.,* B, 16 (1983), L465-70.

CHARLTON, M., GRIFFITH, T. C., HEYLAND, G. R., WRIGHT, G. L., Total scattering cross sections for low-energy positrons in the molecular gases H_2, N_2, CO_2, O_2 and CH_4. *J. Phys.,* B, 16 (1983), 323-41.

CLEGG, R. E. S. (with Husfeld, D., Kudritzki, R. P., Simon, K. P.), Non-LTE model atmospheres of hot central stars close to the Eddington limit. The Zanistra discrepancy and the occurrence of an emission edge at 2238Å. *Astron. Astrophys.,* 134 (1984), 139-46.

COCKSHOTT, R. A., MASON, I. M., The suppression of destructive sparks in parallel plate proportional counters. *IEEE Trans. Nucl. Sci.,* NS31 (1984), 107-10.

CONBOY, J. E., MILLER, D. J. (and others), Charge-exchange scattering in K^-p interactions below 300 Mev/c. *J. Phys.,* G, 9 (1983), 885-94.

CORBET, R. H. D., MASON, K. O., The optical counterpart of 3A0726-260 (4U0728-25). *Astron. Astrophys.,* 131 (1984), 385-9.

COUPLAND, M., A method for measuring the wire tensions in proportional and drift chambers. *Nuc. Instr. Meths,* 211 (1983), 369-70.

CRUISE, A. M., An interaction between gravitational and electromagnetic waves. *Mon. Not. R. astr. Soc.,* 204 (1983), 485-92.

CULHANE, J. L., Space science in the 1980s. *Phys Bull.,* 34 (1983), 430-3.

The X-ray spectra of active galactic nuclei. *Phys. Scr.,* T7 (1984), 134-41.

(with Cash, W. C., Catura, R. C.), New applications of X-ray optical techniques. *Nuc. Instr. Meths,* 221 (1984), 251.

(and others), Corona: A soft X-ray all-sky survey of the hot interstellar medium with high spectral and good spatial resolution. *Phys. Scr.,* T7 (1984), 219.

XMM, a long-lived orbiting X-ray multi-mirror observatory. *Phys. Scr.,* T7 (1984), 224.

CURRY, P. J., NEWELL, W. R., SMITH, A. C. H., Elastic differential scattering and vibrational excitation of CH_4 and C_2H_6 by low energy electrons. *Electronic and Atomic Collisions, XIIIth Int. Conf., Berlin 1983. Abstr. Contributed Papers,* ed. J. Eichler et al. Berlin: Int. Conf. Physics Elec. Atomic Coll., 1983, 244.

Electron-atom scattering in the field of a CO_2 laser. *Ibid.,* 682.

DISERENS, M. J. (with Harrison, M. F. A., Montague, R. M.), A measurement of the cross section for electron impact ionisation of Fe^+. *J. Phys.,* B, 17 (1984), 2085-90.

DISERENS, M. J., SMITH, A. C. H. (with Harrison, M. F. A., Montague, R. M.), Ionisation of singly-charged metallic ions by electron impact. *Electronic and Atomic Collisions, XIIIth Int. Conf., Berlin 1983. Abstr. Contributed Papers,* ed. J. Eichler et al. Berlin: Int. Conf. Physics Elec. Atomic Coll., 1983, 205.

DORLING, E. B., Mullard Space Science Laboratory, University College London Annual Report. *Quart. J. R. astr. Soc.,* 25 (1984), 189-201.

DUFF, M. J. B., IP, H. H. S. (with Clarke, J. A.), Reconstruction of the vascular system of the carotid body of the rat using an array processor. *J. Physiol.,* 341 (1983), 6P-7P.

DWORETSKY, M. M., The smallest-amplitude spectroscopic binary? *Observatory,* 103 (1983), 205-6.

DWORETSKY, M. M., STOREY, P. J., JACOBS, J. M., The spectrum of Pt II in chemically peculiar stars. *Phys. Scr.,* T8 (1984), 39-42.

ERCAN, E. N., CRUISE, A. M., The X-ray spectra of galactic-bulge sources. *Mon. Not. R. astr. Soc.,* 209 (1984), 271-84.

FOUNTAIN, T. J., A survey of bit-serial array processor circuits. *Computing Structures for Image Processing,* ed. M. J. B. Duff. London: Academic Press, 1983, 1-14.

The CLIP7 chip. *IEE Colloquium on 'VLSI Modules for Image Processing'. Digest No. 1983/100,* London: Institution of Electrical Engineers, 1983, 1/1-4.

The development of the CLIP7 image processing system. *Pattern Recognition Lett.,* 1 (1983), 331-9.

Image processing by parallel computer. *Automation,* 19/9 (1983), 8-10.

FULLER-ROWELL, T. J., REES, D., Derivation of a conservation equation for mean molecular weight for a two-constituent gas within a three-dimensional time-dependent model of the thermosphere. *Planet. and Space Sci.,* 31 (1984), 1209-22.

Interpretation of an anticipated long-lived E-region vortex, following simulation of an isolated substorm. *Ibid.,* 32 (1984), 69-85.

(with Quegan, S., Bailey, G. J., Moffett, R. J.), The effect of realistic conductivities on the high-latitude neutral thermospheric circulation. *Planet. and Space Sci.,* 32 (1984), 469-80.

GONDHALEKAR, P. M., PHILLIPS, A. P. (with Morgan, D. H., Dopita, M.), The nature of blue compact galaxies. *Mon. Not. R. astr. Soc.,* 209 (1984), 59-67.

GRIFFITH, T. C., Positron formation cross-sections in various gases. *Proc. NATO Advanced Research Workshop 'Positron Scattering in Gases',* ed. J. W. Humberston and M. R. C. McDowell. New York: Plenum, 1984, 181-4.

GRIFFITH, T. C., CHARLTON, M., CLARK, G., HEYLAND, G. R., WRIGHT, G. L., Positrons in gases — a progress report. *Proc. 6th Int. Conf., Arlington, Texas, April 3-7, 1982. 'Positron Annihilation',* ed. P. G. Coleman, S. C. Sharma and L. M. Diana. Amsterdam: North-Holland, 1982, 61-71.

GROVES, G. V., Thermospheric energy flux of the semidiurnal tide. *Planet. and Space Sci.,* 31 (1983), 1183-6.

(with Forbes, J. M.), Equinox tidal heating of the upper atmosphere. *Planet. and Space Sci.,* 32 (1984), 457-67.

GUEST, J. E. (with Chester, D. K., Duncan, A. M.), The valle del Bore, Mount Etna: its origin and relation to the stratigraphy and structure of the volcano. *J. volc. geotherm. Res.,* 21 (1984), 1-23.

GUEST, J. E., GREELEY, R., Geologic map of the Shakespeare Quadrangle of Mercury (1:5,000,000). MAP I-1408. *U.S. Geol. Surv. Misc. Invest. Ser.* (1983).

HEYLAND, G. R., Positron lifetime spectra for gases. *Proc. NATO Advanced Research Workshop on 'Positron Scattering in Gases',* ed. J. W. Humberston and M. R. C. McDowell. New York: Plenum, 1984, 99-108.

HILDITCH, C. J., Comparison of thinning algorithms on a parallel processor. *Image and Vision Computing,* 1 (1983), 115-32.

HIRST, C. J., DEIGHTON, D. W., FURNISS, I., GLENCROSS, W. M., LIGHTFOOT, J. F., Far-infrared observations of the Galactic plane between $\iota = 18^0$ and $\iota + 20^0$ -I. The survey results. *Mon. Not. R. astr. Soc.,* 206 (1984), 13P-14P.

HOWARTH, I. D., Blueshifted narrow absorption components in the UV spectrum of the binary HD152667. *Mon. Not. R. astr. Soc.,* 206 (1984), 625-36.

HOWARTH, I. D., PRINJA, R. K., ROCHE, P. F., WILLIS, A. J., IUE observations of the X-ray binary A0538-66: spectroscopic study of a strange stellar system. *Mon. Not. R. astr. soc.,* 207 (1984), 287-308.

HOWARTH, I. D., PRINJA, R. K., WILLIS, A. J., Observations of narrow absorption components in the UV spectrum of Zeta Oph. *Mon. Not. R. astr. Soc.,* 208 (1984), 525-45.

HOWARTH, I. D., WILLIS, A. J. (and others), UV, optical and IR observations of the WR contact-eclipsing binary CQ Cep. *Astron. Astrophys.,* 134 (1984), 45-76.

HOWARTH, I. D., WILSON, R., HZ Her: the nature and origin of the emission lines. *Mon. Not. R. astr. Soc.,* 204 (1983), 1091-104.

HUMBERSTON, J. W., Positronium formation in s-wave positron-hydrogen scattering. *J. Phys.,* B, 17 (1984), 2353-61.

(with McDowell, M. R. C.), *Positron Scattering in Gases.* New York: Plenum, 1984. 230 pp.

HUMBERSTON, J. W., BROWN, C. J., Positronium formation in p-wave positron-hydrogen scattering. *J. Phys.,* B, 17 (1984), L423-6.

HUMBERSTON, J. W., McKENZIE, J., The teaching of computing in an undergraduate physics course. *Phys. Educ.,* 19 (1984), 34-42.

INNES, D. E., HARTQUIST, T. W., Are we in an old superbubble? *Mon. Not. R. astr. Soc.,* 209 (1984), 7-13.

IP, H. H. S., Detection and three-dimensional reconstruction of a vascular network from serial sections. *Pattern Recognition Lett.,* 1 (1983), 497-505.

IP, H. H. S., POTTER, D. J. (with Lebedev, D. S.), Impulse noise cleaning by iterative threshold median filtering. *Pattern Recognition Lett.,* 2 (1983), 89-93.

JENNINGS, R. E. (and others), The Infrared Astronomical Satellite (IRAS) Mission. *Astrophys. J.,* 278 (1984), L1-6.

(and others), Far-infrared observations of the Crab nebula. *Astrophys. J.,* 278 (1984), L29-32.

(and others), IRAS spectra of planetary nebulae. *Astrophys. J.,* 278 (1984), L33-5.

(and others), The formation of solar type stars: IRAS observations of the dark cloud Barnard 5. *Astrophys. J.,* 278 (1984), L45-8.

(and others), IRAS observations near young objects with bipolar outflows: L1551 and HH 46-47. *Astrophys. J.,* 278 (1984), L49-52.

(and others), High-sensitivity IRAS observations of the Chamaeleon I dark cloud. *Astrophys. J.,* 278 (1984), L53-5.

(and others), IRAS images of the galactic centre. *Astrophys. J.,* 278 (1984), L57-8.

JOHNSTONE, A. D., The mechanism of pulsating aurora. *Ann. Geophys.,* 1 (1983), 397-410.

JONES, T. W. (and others), Search for n-$\bar{n}$ oscillation in oxygen. *Phys. Rev. Lett.,* 52 (1984), 720-3.

Search for proton decay into $e^+\pi^0$. *Phys. Rev. Lett.,* 51 (1983), 27-30.

(and others), Experimental limits on magnetic monopole catalysis of nucleon decay. *Phys. Rev. Lett.,* 51 (1983), 245-8.

(and others), A search for nucleon decay into μ^+K^0 and νK^0. *Phys. Rev. Lett.,* 52 (1984), 1092-6.

KAMBER, E. Y., HASTED, J. B., Energy loss spectra of Ar^{3+} - HE collisions. *Electronic and Atomic Collisions, XIIIth Int. Conf., Berlin 1983. Abstr. Contributed Papers,* ed. J. Eichler et al. Berlin: Int. Conf. Physics Elec. Atomic Coll., 1983, 540.

KILBURN, C. R. J., Studies of lava flow development. *Forecasting Volcanic Events,* ed. H. Tazieff and J.-C. Sabroux. Amsterdam: Elsevier, 1983, 83-98.

KILBURN, C. R. J. (with Fitton, J. G., Thirlwall, M. F., Hughes, D. J.), 1982 eruption of Mount Cameroon, West Africa. *Nature,* 306 (1983), 327-32.

LEMEN, J. R. (with Sylwester, J., Mewe, R.), Variation in the observed coronal calcium abundance for various X-ray flare plasmas. *Bull. Am. astr. Soc.,* 16 (1984), 545.

(and others), Inner-shell transition of Se XXIII and Se XXIV in the X-ray spectra of solar flares. *Astron. Astrophys.,* 135 (1984), 313-24.

LEWIS, A. S., The sedimentology of Mars: a review. *Vistas Astron.,* 27 (1984), 25-53.

LIGHTFOOT, J. F., CUDLIP, W., FURNISS, I., GLENCROSS, W. M., JENNINGS, R. E., KING, K. J., POULTER, G., Far-infrared observations of W51: a case of sequential star formation? *Mon. Not. R. astr. Soc.,* 205 (1983), 653-67.

LIGHTFOOT, J. F., DEIGHTON, D. W., FURNISS, I., GLENCROSS, W. M., HIRST, C. J., JENNINGS, R. E., POULTER, G., Far-infrared photometry of selected sources in the W28 region: M8, W28A2, W28SNR (G6.6-0.1), G7.5+0.1 and G8.1+0.2. *Mon. Not. R. astr. Soc.,* 208 (1984), 197-213.

LYNAS-GRAY, A. E. (with Drilling, J. S., Schoenberner, D., Heber, U.), Spectrophotometry of extreme Helium stars: Ultraviolet fluxes and effective temperatures. *Astrophys. J.,* 278 (1984), 224-32.

(with Hill, P. W., Kilkenny, D.), A search for variability in the hot Hydrogen-deficient star BD + 10^0 2179. *Mon. Not. R. astr. Soc.,* 207 (1984), 823-30.
(with Kilkenny, D.), A revised ephemeris for the pulsating Hydrogen-deficient star BD + 13^0 3224 (V652 Hev). *Mon. Not. R. astr. Soc.,* 208 (1984), 673-8.

MARTIN, B. R. C. (with Barker, I. S., Shaw, G.), QCD analysis of non-singlet neutrino structure functions. *Z. Phys.,* C, 19 (1983), 147-53.

MASON, I. M., BRANDUARDI-RAYMONT, G., CULHANE, J. L., CORBET, R. H. D., IVES, J. C., SANFORD, P. W., The EXOSAT imaging X-ray detectors. *IEEE Trans. Nucl. Sci.,* 31 (1984), 795-800.
I. M., RAPLEY, C. G. (with Street Perrot, F. A., Harrison, S. P.), Satellite altimetric measurements of lake levels. *Proc. ESA Workshop on the ERS-1 Altimeter Data Products. SP-221,* Paris: European Space Agency, 1984, 165-9.

MASON, K. O., BRANDUARDI-RAYMONT, G., CULHANE, J. L., EXOSAT observations of galactic and extra-galactic sources. *Bull. Am. astr. Soc.,* 16 (1984), 469.

MASON, K. O., CORDOVA, F. A., X-ray Observations of a large sample of cataclysmic variable stars using the Einstein observatory. *Mon. Not. R. astr. Soc.,* 206 (1984), 879-97.

MASSEY, H. S. W. (the late), Fundamental processes in atomic collision physics. *Fundamental Processes in Energetic Atomic Collisions,* ed. H. O. Lutz, J. S. Briggs and H. Kleinpoppen. New York: Plenum, 1983, 1-38.
Summary Lecture. *Ibid.,* 659-68.

MATTHEWS, K. N., Large window median filtering on CLIP7. *Pattern Recognition Lett.,* 1 (1983), 341-6.

McINTRYE, N. F. (with Squire, V. A., Drewry, D. J., Cowan, A. M.), Cryospheric data products available through satellite altimetry. *Proc. ESA Workshop on the ERS-1 Altimeter data products. ESA SP-221,* Paris: European Space Agency, 1984, 51-7.

McNALLY, D., The length of the Lunar Crescent. *Quart. J. R. astr. Soc.,* 24 (1983), 417-29.
Observations of interstellar CO at mm and UV wavelengths and diverse comments on interstellar diffuse lines. *Ir. astron. J.,* 15 (1981), 51-6.
The first 400 years of the Gregorian Calendar. *Ibid.,* 16 (1983), 17-22.

OTTO, G. P., Algorithms for the CLIP4 cellular array processor. *IEE Colloquium on 'VLSI Modules for Image Processing' Digest No. 1983/100,* London: Institution of Electrical Engineers, 1983, 2/1-7.

OTTO, G. P., REYNOLDS, D. E., High level languages for CLIP4. *Cybernetic Systems: Recognition, Learning, Self-Organisation,* ed. E. R. Caianello and G. Musso. Letchworth: Research Studies Press, 1984, 181-92.

PARKINSON, J. H., An amazing flying machine. *New Sci.,* 100 (1983), 759.
The stars foretell. *New Sci.,* 98 (1983), 571.

PARMAR, A. N., CULHANE, J. L., RAPLEY, C. G. (and others), SMM observations of K radiation from fluorescence of photospheric iron by solar flare X-rays. *Astrophys. J.,* 279 (1984), 866-74.

PEACH, G., Radiative recombination coefficients for complex atomic ions. *Electronic and Atomic Collisions, XIIIth Int. Conf., Berlin 1983. Abstr. Contributed Papers,* ed. J. Eichler et al. Berlin: Int. Conf. Physics Elec. Atomic Coll., 1983, 3.
Unified theories of pressure broadening and shift of spectral lines: I. General formulation for multipole interactions. *J. Phys.,* B, 17 (1984), 2599-618.

PHILLIPS, A. P., PETTINI, M., GONDHALEKAR, P. M., Element depletions in the interstellar gas — II. The density dependence of calcium and sodium depletions. *Mon. Not. R. astr. Soc.,* 206 (1983), 337-50.

PHILLIPS, A. P., WELSH, B. Y., PETTINI, M., IUE observations of high-velocity interstellar gas towards stars in the OB assocation Cyg OB1. *Mon. Not. R. astr. Soc.,* 206 (1983), 55-69.

POULTER, G., A servo-controlled Fabry-Perot interferometer for the FIR. *Infrared Phys.,* 24 (1984), 35-42.

PRINJA, R. K., IUE ultraviolet observations of narrow absorption components in the spectrum of Zeta Puppis. *Mon. Not. R. astr. Soc.,* 207 (1984), 157-66.

PRINJA, R. K., HOWARTH, I.D., The effect of the velocity law plateau on theoretical P Cygni profiles. *Astron. Astrophys.,* 133 (1984), 110-16.

RAPLEY, C. G., Report of the working group on the overall definition of the ERS-1 altimeter off-line ground segment. *Proc. ESA Workshop on the ERS-1 Altimeter data products. ESA SP-221,* Paris: European Space Agency, 1984, 249-54.

Observations of sea ice and icebergs from satellite radar altimeters. *'Frontiers of Remote Sensing of the Oceans and Troposphere from Air and Space Platforms' Conf. 2303,* Washington, D. C.: NASA, 1984, 527-36.

First observations of the interaction of ocean swell with sea ice using stallite radar altimeter data. *Nature,* 307 (1984), 150-2.

(with Griffiths, H. D.), Modelling of altimeter tracking over topographic surfaces. *Proc. ESA Workshop on the ERS-1 Altimeter Data Products. ESA SP-221,* Paris: European Space Agency, 1984, 177-80.

REES, D., CHARLETON P. J., LLOYD, N. D. (with McCormac, F. G., Steen, A.), The generation of vertical thermospheric winds and gravity waves at auroral latitudes — I. Observations of vertical winds. *Planet. and Space Sci.,* 32 (1984), 667-84.

(with Steen, A., Witt, G.), Interferometric and Doppler Imaging Studies of the auroral thermosphere from Kiruna Geophysical Institute. *Proc. 6th ESA Symp. on Rocket and Balloon Programmes. ESA SP-183,* Paris: European Space Agency, 1983, 53-7.

REES, D., FULLER-ROWELL, T. J., GORDON, R.A. (and others), A comparison of wind observations of the upper thermosphere from the Dynamics Explorer satellite with the predictions of the global time-dependent model. *Planet. and Space Sci.,* 31 (1983), 1299-314.

REES, D., GREENAWAY, A. H., GORDON, R.A., McWHIRTER, I., CHARLETON, P. J. (with Steen, A.), The Doppler Imaging System: initial observations of the auroral thermosphere. *Planet. and Space Sci.,* 31 (1983), 273-85.

REES, D., SMITH, M. F., GORDON, R. A., The generation of vertical thermospheric winds and gravity waves at auroral latitudes — II. Theory and numerical modelling of vertical winds. *Planet. and Space Sci.,* 32 (1984), 685-705.

ROCHE, P. F., AITKEN, D. K., An investigation of the interstellar extinction — I. Towards dusty WC Wolf Rayet stars. *Mon. Not. R. astr. Soc.,* 208 (1984), 481-92.

(with Allen, D. A.), Symbiotic stars: spectrophotometry at 3-4 and 8-13 μm. *Mon. Not. R. astr. Soc.,* 204 (1983), 1009-15.

ROCHE, P. F., AITKEN, D. K., WHITMORE, B. W., 8-13 μm spectral observations of eight moderately extended planetry nebulae. *Mon. Not. R. astr. Soc.,* 204 (1983), 1017-24.

8-13 μm spectrophotometry of galaxies — III. The silicate absorption in Markarian 231. *Mon. Not. R. astr. Soc.,* 205 (1983), 21P-6P.

(with Phillips, M. M.), 8-13 μm spectrophotometry of galaxies — II. 10 Seyferts and 3C 273. *Mon. Not. R. astr. Soc.,* 207 (1984), 35-45.

RODGERS, D. J., WRENN, G. L. (with Cowley, S. W. H.), Evidence for the heating of thermal electrons at the magnetopause boundary layer. *Planet. and Space Sci.,* 32 (1984), 657-66.

SANSUM, R. A., AZEMOON, T., BARTLEY, J. H., BULLOCK, F. W., FITCH, P. J. (and others), An investigation of the EMC effect using antineutrinos in Deuterium and Neon. *Physics Lett.,* B, 141 (1984), 133-9.

SARAPH, H. E., Calculation of atomic data for astrophysics at University College London. *Phys. Scr.,* T8 (1984), 134-40.

SARAPH, H. E., SEATON, M. J., A fast asymtotic package. *Electronic and Atomic Collisions, XIIIth Int. Conf., Berlin 1983. Abstracts of Contributed Papers,* ed. J. Eichler (and others). Berlin: Int. Conf. Physics Elec. Atomic Coll., 1983, 717.

SCHWARZ, H. E. (with Clarke, D.), The polarization of α Orionis I: Interpretation of broad-band measures. *Astron. Astrophys.,* 132 (1984), 370-4.

The polarization of α Orionis II: interpretation of narrow-band measures. *Astron. Astrophys.,* 132 (1984), 375-80.

SCHWARZ, H. E. (with Clarke, D., Stewart, B. G., Brooks, A.), The statistical behaviour of normalised Stokes parameters. *Astron. Astrophys.,* 126 (1983), 260-4.

SCHWARZ, H. E., MASON, I. M., A new imaging proportional counter using a Penning gas improves energy resolution. *Nature,* 309 (1984), 532-4.

SCOTT, R. F., HUCKLE, H. E., Standardisation of data formats for radar altimetry data. *Proc. ESA Workshop on the ERS-1 Altimeter data products. ESA SP-221,* Paris: European Space Agency, 1984, 205-8.

SEATON, M. J. (with Dubau, J.), Quantum defect theory XIII. Radiative transitions. *J. Phys.,* B, 17 (1984), 381-403.

SEATON, M. J., ADAMS, S. (with Auriere, M.), Ultraviolet and optical observations of two stars belonging to the blue horizontal branch of the globular cluster M 15. *Mon. Not. R. astr. Soc.,* 205 (1983), 571-6.

SEATON, M. J., ADAMS, S., HOWARTH, I. D. (with Auriere, M., Walsh, J. R.), K 648, the planetary nebula in the globular cluster M 15. *Mon. Not. R. astr. Soc.,* 207 (1984), 471-89.

SEATON, M. J., CLEGG, R. E. S. (with Peimbert, M., Torres-Peimbert, S.), Analysis of nebulosity in the planetary nebula NGC 40. *Mon. Not. R. astr. Soc.,* 205 (1983), 417-34.

SEATON, M. J., CREES, M. A. (with Sil, N. C.), Integrals involving products of Coulomb functions and inverse powers of the radial co-ordinate. *J. Phys.,* B, 17 (1984), 1-19.

SMITH, L. J., WILLIS, A. J., The physical and chemical properties of WR stars in the LMC. *Proc. Workshop on WR stars as Progenitors of Supernovae,* ed. M. C. Lortet and A. Pitault. Meudon: L'Observatoire de Paris, 1983, 3.79-93.

Ultraviolet and visible spectrophotometry of nine LMC Wolf-Rayet stars. *Astron. and Astrophys. Suppl. Ser.,* 54 (1983), 229-80.

SOMERVILLE, W. B., WHITTET, D. C. B., McNALLY, D. (with Dickman, R. L., Blades, J. C.), Abundances of carbon-bearing diatomic molecules in diffuse interstellar clouds. *Astrophys. J. Suppl. Ser.,* 53 (1983), 55-72.

STOREY, P. J. (with Nüssbaumer, H.), Dielectronic recombination at low temperatures, II. Recombination coefficients for lines of C, N, O. *Astron. and Astrophys. Suppl. Ser.,* 56 (1984), 293-312.

(with Nüssbaumer, H.), Dielectronic recombination at low temperatures. *Astron. Astrophys.,* 126 (1983), 75-9.

STOREY, P. J., DWORETSKY, M. M., JACOBS, J. M., The spectrum of Pt II in chemically peculiar stars. *Phys. Scr.,* T8 (1984), 39-42.

WHITEHOUSE, D. R., BRANDUARDI-RAYMONT, G., Europe X rays the skies. *New Sci.,* 102 (1984), 34-7.

WHITTET, D. C. B., AITKEN, D. K., ROCHE, P. F., WHITMORE, B. W. (with Bode, M. F., Evans, A.), Infrared photometry and spectrometry of Nova Aquilae 1982. *Mon. Not. R. astr. Soc.,* 207 (1984), 897-907.

Infrared photometry and spectrometry of Nova Aquilae 1982. *Mon. Not. R. astr. Soc.,* 207 (1984), 897-907.

WILKIN, C., The Pion as a probe of conventional nuclear structure. *Europhys. News.,* 15 (1984), 14-16.

(with Germond, J.-F.), Pion production in exclusive He-induced reactions. *J. Phys.,* G, 10 (1984), 745-72.

WILLIS, A. J., The stellar winds and mass loss properties of WR stars. *The observational basis for velocity fields in stellar atmospheres. NASA-CNR,* ed. R. Stalio. Washington, D.C.: NASA, 1983, 111-63.

Ultraviolet spectroscopy of Wolf-Rayet stars. *Proc. Workshop on WR Stars as Progenitors of Supernovae,* ed. M. C. Lortet and A. Pitault. Meudon: L'Observatoire de Paris, 1983, 3.35-51.

(with Doazan, V., Stalio, R., Thomas, R. N.), Abrupt changes in the superionisation wind structure of Theta CrB. *Astron. Astrophys.,* 131 (1984), 210-4.

WOOD, A. M., The organisation of parallel processing machines. *'Parallel Processing: Logic, Organisation, and Technology', WOPPLOT 83,* ed. J. Becker and I. Eisele. Berlin: Springer-Verlag, 1984, 132-44.

WRENN, G. L. (and others), Comparison of thermal plasma observations on SCATHA and GEOS. *'Spacecraft/Plasma Interactions'. Proc. 17th ESLAB Symposium, 13-16 Sept., 1983. ESA SP-198,* Paris: European Space Agency, 1983, 57-61.

(and others), Observations of the GEOS equilibrium potential and its relation to the ambient electron energy distribution. *'Spacecraft/Plasma Interactions', Proc. 17th ESLAB Symposium, 13-16 Sept., 1983. ESA SP-198,* Paris: European Space Agency, 1983, 19-24.

WRENN, G. L., JOHNSON, J. F. E., Ion measurements on GEOS using a negatively biased sensor on a positively charged spacecraft. *'Spacecraft/Plasma Interactions', Proc. 17th ESLAB Symposium, 13-16 Sept., 1983. ESA SP-198,* Paris: European Space Agency, 1983, 63-8.

(with Sojka, J. J.), Thermal protons in the morning magnetosphere: filling and heating near the equatorial plasmapause. *Planet. and Space Sci.,* 32 (1984), 351-63.

WRIGHT, G. L., CHARLTON, M., CLARK, G., GRIFFITH, T. C., HEYLAND, G. R., Positron lifetime parameters in H_2, CO_2 and CH_4. *J. Phys.,* B, 16 (1983), 4065-88.

PSYCHOLOGY

BAINBRIDGE, LISANNE, Diagnostic skill in process operation. *Pro. 1984 Int.Conf. Occup. Ergonomics, Toronto,* vol.2. (1984), reviews 1-10.

BIRNBAUM, RACHEL (with O'Neill, J.), *The New Technology Office Checklist, 3rd ed. UCL: Ergonomics Unit, 1983. 11 pp.*

(with O'Neill, J.), An evaluation of the new technology office — and the development of a relevant ergonomic checklist. *Ergonomics and Health Aspects in Modern Offices. Proc. IEA Int.Conf., Turin, Nov. 1983,* ed. E. Grandjean. London: Taylor & Francis, 1984, 70-6.

CROMER, R. F., First language acquisition. *The Encyclopaedic Dictionary of Psychology,* ed. R. Harre and R. Lamb. Oxford: Blackwell, 1983, 237-9.

Symbolic skill acquisition in language. *The Acquisition of Symbolic Skills,* ed. D. Rogers and J. A. Sloboda. New York and London: Plenum Press, 1983, 407-11.

Hierarchical planning disability in the drawings and constructions of a special group of severely aphasic children. *Brain & Cog.,* 2 (1983), 144-64.
A longitudinal study of the acquisition of word knowledge: evidence against gradual learning. *Brit. J. Develop. Psychol.,* 1 (1983), 307-16.
DIXON, N. F., Subliminal perception and microgenesis. *Psychological Processes in Cognition and Personality,* ed. W. D. Froehlich, G. Smith, J. G. Draguns and U. Hentschel. New York: Hemisphere, 1984, 225-9.
The conscious-unconscious interface. *Arch. Psychol.,* 135 (1) (1983), 55-6.
DIXON, N. F., HENLEY, SUSAN H. A., Predicting performance in aircrew. *Travel & Traffic Med. Int.,* 1 (3) (1983), 176-7.
EVETT, LINDSAY J., Automatic orthographic priming: implications for processing orthography. *Working Papers London Psycholinguistic Res. Group,* 5 (1983), 48-55.
FONAGY, P. (with Calloway, S. P., Wakeling, A.), Autonomic arousal in eating disorders: further evidence for the clinical subdivision of anorexia nervosa. *Brit. J. Psychiat.,* 142 (1983), 38-42.
(with Higgitt, A. C.), Psychotherapy and neurotics. *Arch. Gen. Psychiat.,* 40 (1983), 470-1.
(with Higgitt, A. C.), A note on statistical inference in meta-analysis. *Behav.Res.Ther.,* 21 (1983), 87-8.
(with Higgitt, A. C.), Hemispheric asymetry and sleep. *Sleep Topics,* 4 (1984), 3-4.
FONAGY, P., MORGAN, M. J. (with Calloway, S. P., Pounder, R. E.), Behavioural techniques in the management of aerophagia in patients with hiatus hernia. *J. Psychosom. Res.,* 27 (1983), 499-502.
FRITH, UTA, Psychologische studien zur rolle der orthographie beim lesen und schreiben. *Schrift, Schreiben, Schriftlichkeit,* ed. K. B. Gunther and H. Gunther. Tubingen: Max Neimeyer Verlag, 1983, 119-31.
Introduction to 'Reading and Spelling'. *The Acquisition of Symbolic Skills,* ed. D. R. Rogers and J. A. Sloboda. New York: Plenum Press, 1983, 105-8.
Spelling. Long entry. *The Encyclopaedic Dictionary of Psychology,* ed. R. Harre and R. Lamb. Oxford: Blackwell, 1983.
Specific spelling problems. *Dyslexia: A Global Issue,* ed. R. N. Malatesha and H. A. Whitaker. The Hague: Martinus Nijhoff, 1983, 83-103.
FRITH, UTA, SNOWLING, MAGGIE, Reading for meaning and reading for sound in autistic and dyslexic children. *Brit. J. Develop. Psychol.,* 1 (1983), 329-42.
FURNHAM, A., Research in social skills training: a critique. *New Directions in Social Skill Training,* ed. R. Ellis and D. Whittington. London: Croom Helm, 1983, 76-114.
Situational determinants of social skill. *Ibid.,* 267-98.
Mental health and employment status: a preliminary study. *Brit. J. Guidance & Counselling,* 11 (1983), 197-201.
The A type behaviour pattern, mental health and locus of control beliefs. *Social Science and Medicine,* 20 (1983), 1569-72.
The Protestant work ethic, human values, and attitudes towards taxation. *J. Econ. Psychol.,* 2 (1983), 113-28.
Inflation and the estimated sizes of notes. *Ibid.,* 4 (1983), 349-52.
Social difficulty in three cultures. *Int. J. Psychol.,* 18 (1983), 215-28.
Personality and handedness. *Personality and Individual Differences,* 4 (1983), 715-17.
Lay conceptions of neuroticism. *Ibid.,* 5 (1984), 95-103.
Extraversion, sensation seeking, stimulus screening, and 'A' type behaviour pattern: the relationship between various measures of arousal. *Ibid.,* 5 (1984), 133-40.

The Protestant work ethic: a review of the psychological literature. *Europ. J. Social Psychol.,* 14 (1984), 87-104.
Tourism and culture shock. *Annals Tourism Res.,* 11 (1984), 41-57.
(with Alibhai, N.), Cross-cultural differences in the perception of female body-shapes. *Psychological Medicine,* 13 (1983), 829-37.
(with Argyle, M.), Sources of satisfaction and conflict in long-term relationships. *J. Marriage and the Family,* 45 (1983), 481-93.
(with Burbeck, L.), Personality and police selection: trait differences in successful and non-successful applicants to the metropolitan police. *Personality and Individual Differences,* 5 (1984), 257-63.
(with Gunter, B.), Political knowledge and awareness in adolescents. *J. Adolescence,* 6 (1983), 373-85.
(with Gunter, B.), Personality and the perception of television violence. *Personality and Individual Differences,* 4 (1983), 315-21.
(with Gunter, B.), Perceptions of television violence: effects of programme genre and type of violence on viewers' judgements of violent portrayals. *Brit. J. Social Psychol.,* 23 (1984), 155-64.
(with Gunter, B., Jarrett, J.), Time of day effects on immediate memory for television news. *Human Learning,* 2 (1983), 261-7.
(with Gunter, B., Jarrett, J.), Personality, time of day and delayed memory for television news. *Personality and Individual Differences,* 5 (1984), 35-40.
(with Henderson, M.), Response bias in self-report measures of general health. *Personality and Individual Differences,* 4 (1983), 519-25.
(with Henderson, M.), The mote in thy brother's eye, and the beam in thine own: predicting one's own and other's personality test scores. *Brit. J. Psychol.,* 74 (1983), 381-9.
(with Henderson, M.), Dimensions of assertiveness: factor analysis of five assertion inventories. *J. Behav. Res. & Exp. Psychiat.,* 14 (1983), 223-31.
(with Henderson, M.), A content and correlational analysis of five assertiveness inventories. *Behavioural Assessment,* 6 (1984), 79-88.
(with Jaspars, J.), The evidence for interactionism in psychology: a critical analysis of the situation-response inventories. *Personality and Individual Differences,* 4 (1983), 627-44.
(with Jaspars, J., Fincham, F.), Professional and naive psychology: two approaches to the explanation of social behaviour. *Attribution Theory and Research,* ed. J. Jaspars, F. Fincham and M. Hewstone. London: Academic Press, 1983, 315-40.
(with Kirris, R.), Self-image disparity, ethnic identity and sex-role stereotypes in British and Cypriot adolescents. *J. Adolescence,* 6 (1983), 275-92.
(with Lane, S.), Actual and perceived attitudes towards deafness. *Psychological Medicine,* 14 (1984), 417-23.
(with Lowick, V.), Attitudes to alcohol consumption: the attribution of addiction. *Social Science and Medicine,* 18 (1984), 673-81.
(with Pendleton, D.), Assessment of social skills in the elderly. *Int. J. Aging and Human Development,* 17 (1983), 29-38.
(with Stackhouse, J.), A student-centered approach to the evaluation of clinical skills. *Brit. J. Communication Disorders,* 18 (1983), 171-9.
GREEN, D. W. (with Galbraith, D., Wason, P. C.), Writing, reading and talking (about research). *Bull. Brit. Psychol. Soc.,* 37 (1984), 100.
GREER, K. L., GREEN, D. W., Context and motor control in handwriting. *Motor Aspects of Handwriting,* ed. A. J. Thomassen, P. J. Keuss and G. P. Van Galen. Amsterdam: North-Holland, 1984.

Context and motor control in handwriting. *Acta Psychol.,* 54 (1983), 205-15.
HARVEY, N. J. W., Dual coding under conditions of second stimulus modality uncertainty in successive matching tasks. *Perception ad Psychophysics,* 34 (1983), 180-4.
The Stroop effect: failure to focus attention or failure to maintain focusing. *Quart. J. Exp. Psychol.,* 36A (1984), 89-115.
HENLEY, SUSAN H. A., Bereavement by suicide: the effects of a suicidal death upon surviving relatives. *Bereavement Care,* 2(2) (1983), 6-7.
Bereavement in adolescence: a review of the literature. *Paper commissioned by CRUSE, the National Organization for the Widowed and their Children,* 1983.
Unconscious perception re-revisited: a comment on Merkle's 1982 paper. *Bull. Psychonomic Soc.,* 22 (2) (1984), 121-4.
HENLEY, SUSAN H. A., DIXON, N. F., WEIR, CATHERINE G., Extraction of information from continuously masked verbal stimuli. *Current Psychol. Res. & Rev.,* 3 (1) (1984), 1-7.
HOWARD, D. (with Orchard-Lisle, V. M.), On the origin of semantic errors in naming: evidence from the case of a global aphasic. *Cognitive Neuropsychol.,* 1 (1984), 163-90.
HOWARD, D., MORTON, J. (with Franklin, S., Patterson, K. E., Orchard-Lisle, V. M.), Therapy for anomia: a comparison of two facilitation methods. *Proc. XIX Congr. Int. Assoc. Logopaedics & Phoniatrics,* vol. 1, ed. M. Edwards. Perth, Scotland: Danscot Print, 1984.
(with Franklin, S., Patterson, K. E., Orchard-Lisle, V. M.), Naming errors: consistency and confidence. *Proc. XIX Congr. Int. Assoc. Logopaedics & Phoniatrics,* vol. 1, ed. M. Edwards. Perth, Scotland: Danscot Print, 1984.
HOWELL, P., An acoustic determinant of perceived and produced anisochrony. *Proc. 10th Int. Congr. Phonetic Sciences,* ed. A. Cohen and M. P. R. van den Broecke. Amsterdam: Foris, 1984, 429-33.
The effect of delaying auditory feedback of selected components of the speech signal. *Perception and Psychophysics,* 34 (1983), 387-96.
(with Rosen, S.), Natural auditory sensitivies as universal determiners of phonemic categories. *Explanations of Language Universals,* ed. B. Butterworth, B. Comrie and O. Dahl. Berlin: Mouton, 1983, 205-35.
(with Rosen, S.), Sinusoidal plucks and bows are not categorically perceived, either. *Perception and Psychophysics,* 34 (1983), 233-6.
HOWELL, P., KHAN, I. (with Powell, D. J.), Amplitude contour of the delayed signal and interference in Delayed Auditory Feedback tasks. *J. Exp. Psychol., Human Perception and Performance,* 9 (1983), 772-84.
JOHNSON, P., Image generation and motor production; an exploratory model. *Proc. Canadian Soc. for Psychomotor Learning,* ed. L. Wankel and R. B. Wilberg. Edmonton, Canada: University of Alberta, 1983, 299-322.
JOHNSON, P., DIAPER, D., LONG, J., Syllabi for training in information technology. *Proc. Ergonomics Soc. Ann. Conf.,* ed. E. D. Megaw. London: Taylor & Francis, 1984, 92-7.
JONCKHEERE, A. R., McCLELLAND, A. G. R., RAWLES, R. E. (with Le Voi, M. E., Ayton, P. J.), Unidimensional memory traces: on the analysis of multiple cued recall. *J. verb. Learn. verb. Behav.,* 22 (1983), 560-76.
KARMILOFF-SMITH, ANNETTE, Language development as a problem-solving process. *Papers and Reports on Child Language Development,* vol.22, ed. E. V. Clark and K. C. Queller. Stanford University Publications, 1983, 1-22.
Children's problem solving. *Advances in Developmental Psychology,* ed. M. E. Lamb, A. L. Brown and B. Rogoff. Hillsdale, N.J.: Erlbaum, 1984.

A note on the concept of metaprocedural processes in linguistic and non-linguistic cognitive development. *Arch. Psychologie,* 51 (1983), 35-40.

LESLIE, A., Infant perception of a manual pick-up event. *Brit. J. Devel. Psychol.,* 2 (1984), 19-32.

LONG, J., An evaluation of tests likely to aid the selection of trainee conference interpreters. *Proc. Ergonomics Soc. Ann. Conf.,* ed. E. D. Megaw. London: Taylor & Francis, 1984, 98-103.

(with Martin, J., Broome, D.), The division of attention between a primary tracking task and secondary tasks of pointing with a stylus or speaking in a simulated ship's-gunfire-control task. *Ergonomics,* 27 (1984), 397-408.

(and others), Selecting trainee conference interpreters: a preliminary study. *J. Occup. Psychol.,* 57 (1984), 17-31.

LONG, J., GILLIGAN, P., Videotext technology: an overview with special reference to transaction processing as an interactive service or everything you ever wanted to know about text on TV and were terrified that someone would tell you. *Behaviour & Information Technology,* 3 (1984), 41-71.

LONG, J., WHITEFIELD, A. (with Dennett, J.), The effect of display format on the direct entry of numerical information by pointing. *J. Human Factors,* 26 (1984), 3-17.

MALIPHANT, R., Educational psychology. *The Encyclopaedic Dictionary of Psychology,* ed. R. Harre and R. Lamb. Oxford: Blackwell, 1983, 173-5.

School failure. *Ibid.,* 548-50.

MATHER, G. W. (with Cavanagh, P., Anstis, S. M.), Screening for colour blindness using optokinetic nystagmus. *Invest. Ophth. Visual Sci.,* 25 (1984), 463-6.

(with Moulden, B. P.), Thresholds for movement direction: two directions are less detectable than one. *Quart. J. Exp. Psychol.,* 35 (1983), 513-18.

MILLAR, W. S., Reasons for the attribution of intent in 7- and 9-year old children. *Brit. J. Develop. Psychol.,* 2 (1984), 51-61.

MORGAN, M. J., Mental rotation: a computationally plausible account of transformation through intermediate steps. *Perception* (1983), 203-11.

Computational theories of vision. *Quart. J. exp. Psychol.,* 36A (1984), 157-65.

MORGAN, M. J., MATHER, G., WATT, R. J. (with Moulden, B. P.), Intensity-response nonlinearities and the theory of edge localization. *Vis. Res.,* 24 (1984), 713-19.

MORGAN, M. J., WATT, R. J., On the failure of spatiotemporal interpolation: a filtering model. *Vis. Res.,* 23 (1983), 997-1004.

(with McKee, Suzanne P.), Exposure duration affects the sensitivity of Vernier acuity to target motion. *Vis. Res.,* 23 (1983), 541-6.

MORTON, J., On levels. *Commentary on How are Grammars represented?* by E. P. Stabler, Jr. *Behav. & Brain Sci.,* 6 (1983), 413.

OAKLEY, D. A. (with Goldstein, L. H.), Autoshaping and open field activity in rats pre-and neonatally exposed to alcohol. *IRCS Med. Sci.,* 11 (1983), 807-8.

(with Goldstein, L. H.), Associative learning, cognitive ability and diffuse brain damage. *Ibid.,* 1028-9.

OAKLEY, D. A., JACOBS, J. L. (with Davey, G. C. L., Cleland, G. G.), The effect of early feeding experience on signal-directed response topography in the rat. *Physiol. Behav.,* 32 (1984), 11-15.

PEARCE, SHIRLEY, Pain. *Psychology Survey,* vol.4, ed. J. Nicholson and B. M. Foss. London: British Psychological Society, 1983, 170-233.

A review of cognitive-behavioural methods for the treatment of chronic pain. *J. Psychosom. Res.,* 27 (1983), 431-40.

(with Steptoe, A.), Common ground in pain and stress research. *J. Psychosom. Res.,* 27 (1983), 337-41.

RAWLES, R. E., Individual fruits. *Times Higher Ed. Suppl.,* 567 (1983), vi.

Human factor. *Ibid.,* 576 (1983), 24.

Inherited from Galton: current scientific and ideological effects on intelligence. *Bull. Brit. Psychol. Soc.,* 37 (1984), A72.

SNOWLING, M. J., The comparison of acquired and developmental disorders of reading. *Cognition,* 14 (1983), 105-18.

(with Perin, D.), Phoneme segmentation skills in young children. *The Acquisition of Symbolic Skills,* ed. D. R. Rogers and J. A. Sloboda. New York: Plenum Press, 1983, 155-62.

(with Stackhouse, J.), Segmentation and spelling in children with speech disorders. *Proc. XIX Congr. Int.Assoc. Logopaedics & Phoniatrics,* vol.1, ed. M. Edwards. Perth, Scotland: Danscot Print.

(with Stackhouse, J.), Spelling performance of children with developmental verbal dyspraxia. *Develop. Med. & Child Neurol.,* 25 (1983), 430-7.

SNOWLING, M., FRITH, U., Hyperlexia: reading by autistic children. *Working Papers London Psycholingistic Res. Group,* 5 (1983), 62-70.

STEINBERG, H. (with Davies, Christina), Experience mimics amphetamine of chloridazepoxide stimulation in rats. *Brit. J. Pharmac. (Proc. Suppl.),* 82 (1984), 238P.

(with Davies, Christina), A biphasic effect of chlordiazepoxide on animal locomotor activity. *Neurosci. Letts,* 46 (1984), 346-51.

VISICK, D., JOHNSON, P., LONG, J., A comparative analysis of keyboards and voice recognition in a parcel-sorting task. *Proc. Ergonomics Soc. Ann. Conf.,* ed. E. D. Megaw. London: Taylor & Francis, 1984, 56-61.

STATISTICAL SCIENCE

BIRKHEAD, B. G., JACKSON, R. R. P., GREGORY, W. M., The use of a mathematical model of tumour response for the testing of strategies in cancer chemotherapy. *Proc. 3rd Int. Conf. on Systems Science in Health Care,* Munich: Springer-Verlag, 1984, 479-83.

DAWID, A. P., Inference, statistical: I. *Encyclopedia of Statistical Sciences,* vol. 4, ed. S. Kotz, N. L. Johnson and C. B. Read. New York: Wiley-Interscience, 1983, 89-105.

Invariant prior distributions. *Ibid.,* 228-36.

Causal inference from messy data. *J. Amer. Statist. Ass.,* 79, 22-4.

Statistical theory. The prequential approach. *J. Roy. Statist. Soc.* A, 147, 278-92.

GALBRAITH, R. F., Goodness of fit tests in fission track dating. J. Math. Geol., 14 (1983), 567-9.

ISHAM, V. S., Multiple Markov point processes: some approximations. *Proc. R. Soc. Lond.,* A, 391 (1984), 39-53.

(with Harkness, R. D.), A bivariate spatial point pattern of ants' nests. *Appl. Statist.,* 32 (1984), 293-303.

O'BRIEN, C., STONE, M., A new procedure to analyse radioactive emission count data. *Nuclear Instruments and Methods in Physics Research,* 223 (1984), 130-6.

SMITH, J. Q. (with Gathercole, R. B.), Principles of interactive forecasting. De Finetti volume in *Bayesian Statistics,* 1984.

(with Gathercole, R. B.), A dynamic forecasting model for a class of discontinuous time series. *Proc. 9th Int. Time Series Meeting I.T.M.S.,* 1984.

STONE, M., Fiducial probability. *Encyclopedia of Statistical Sciences,* vol. 3, ed. S. Kotz, N. L. Johnson and C. B. Read. New York: Wiley-Interscience, 1983, 81-6.

Variance-covariance modelling with chromosome markers. *J. Theor. Biol.,* 107 (1984), 275-86.

(with Frangos, C. C.), On jackknife, cross-validatory and classical methods of estimating a proportion with batches of different sizes. *Biometrika,* 71 (1984), 361-6.

ZOOLOGY AND COMPARATIVE ANATOMY

ABNEY, E., WILLIAMS, B., RAFF, M. C., Tracing the development of oligodendrocytes using monoclonal antibodies and fluorescence activated cell sorting. *Dev. Biol.,* 100 (1983), 166-71.

BERRY, R. J. (with Jeeves, M. A., Atkinson, D.), Free to be different. *Variety of Human Behaviour.* London: Marshall, Morgan & Scott, 1984.

Genetics and conservation. *Conservation in Perspective,* ed. A. Warren and F. B. Goldsmith. London: Wiley, 1983.

Genes and morals. *Behavioural Science — a Christian perspective,* ed. M. Jeeves, Leicester: IVP, 1984, 59-72.

Biological evolution in the Inner Hebrides. *Proc. R. Soc. Edin.,* 83B (1983), 433-47.

Polymorphic shell banding in the dog-whelk. *Nucella lapillus* (L). *J. Zool. Lond.,* 200 (1983), 455-70.

A steady and devout lover of natural history. *Biol. J. Linn. Soc.,* 20, (1983), 1-2.

The evolution of British biology. Presidential address to the Linnean Society. *Biol. J. Linn. Soc.,* 20 (1983), 327-52.

Diversity and differentiation: the importance of island biology for general theory. *Oikos,* 41 (1983), 523-9.

In memoriam Hans Grüneberg. *Immunogenetics,* 18 (1983), 309-10.

Darwin was astonished. *Biol. J. Linn. Soc.,* 21 (1984), 1-4.

BEVAN, S., ADAMS, D. J., Acetylcholine receptors in cultured human myotubes: distribution and single-channel properties. *J. Physiol.,* 341 (1983), 25-6.

BEVAN, S., ADAMS, D. J., TERRAR, D. A., Kinetics of hexamethonium action on ACh receptor-channels in frog skeletal muscle. *Br. J. Pharmacol.,* 80 (1983), 457.

BEVAN, S., WENDON, L. M. B., A study of the action of tetanus toxin at rat soleus neuromuscular junctions. *J. Physiol.,* 348 (1984), 1-17.

(with Gray, P. T. A., Rang, H. P., Ritchie, J. M.), Calcium-activated ion channels in rat Schwann cells. *J. Physiol.,* 348 (1984), 17.

(with Gray, P. T. A., Ritchie, J. M.), A high conductance anion-selective channel in rat Schwann cells. *J. Physiol.,* 348 (1984), 18.

(with Gray, P. T. A., Ritchie, J. M.), High conductance anion-selective channels in rat cultured Schwann cells. *Proc. R. Soc. Lond.,* B, 221 (1984), 395-409.

BEVERLEY, P. C. L., Malignant disease. *Immunology in Medicine,* ed. E. J. Holborow and G. Reeves. London: Academic Press, 1983, 559-74.

The importance of T3 in the activation of T lymphocytes. *Nature,* 304 (1983), 398-9.

(with Sanderson, A.), Interferon beta-2-microglobulin and immunoselection in the pathway to malignancy. *Immunology Today,* 4 (1983), 211-13.

(with Rowe, D. J.), Characterization of breast cancer. *Br. J. Cancer,* 49 (1984), 149-59.
(and others), Impaired production of interleukins in patients with cell-mediated immunodeficiencies. *Clin. exp. Immunol.* 51 (1983), 338-44.
(and others), Monoclonal antibodies to human leucocyte antigens in polymyositis and muscular dystrophy. *Clin. exp. Immunol.,* 54 (1983), 327-36.
(and others), Anti-T cell reagents for human bone marrow transplantation: ricin linked to three monoclonal antibodies. *Science,* 222 (1983), 512-15.
(and others), Lymphocyte sub-populations in human cord blood: analysis with monclonal antibodies. *J. Reprod. Immunol.,* 5 (1983), 311-17.
(and others), Two monoclonal antibodies identifying a subset of human peripheral mononuclear cells with natural killer cell activity. *Eur. J. Immunol.,* 13 (1983), 166-71.
(and others), The nature of hairy cells — a study with a panel of monoclonal antibodies. *Scand. J. Haematol.,* 30 (1983), 223-6.
(and others), Immune human lymphocytes produce an acid-labile -interferon. *J. Exp. Med.,* 157 (1983), 1059-63.
(and others), Monoclonal antibodies to natural killer cells. *Eur. J. Immunol.,* 13 (1983), 521-7.
(and others), Monoclonal antibodies defined abnormalities of T-lymphocytes in type 1 (insulin-dependent) diabetes. *Diabetes,* 32 (1983), 91-4.
(and others), Monoclonal antibodies differentiating between monocytic and non-monocytic variants of AML. *Blood,* 63 (1984), 566-73.
(and others), Anti-T cell monoclonal antibodies conjugated to ricin as potential reagents for human GVHD prophylaxis: effect on the generation of cytotoxic T cells in both peripheral blood and bone marrow. *J. Immunol.,* 132 (1984), 678-83.
(and others), An immunohistological study of secondary Sjogren's syndrome. *Ann. Rheum. Dis.,* 43 (1984), 470-6.

CHAN, W. L., Protective immunization of mice with specific HSV-1 glycoproteins. *Immunology,* 49 (1983), 343-52.

COLLINS, M., KINNON, C., The lymphocyte membrane. *Immunology Today,* 5 (1984), 1-5.

CRAWFORD, D. H., CALLARD, R. E., MITCHELL, D. M., ZANDERS, E. D., BEVERLEY, P. C. L. (with Muggeridge, M. I.), Production of human monoclonal antibody to X31 influenza virus nucleoprotein. *J. Gen. Virol.,* 64 (1983), 697-700.

CRAWFORD, D. H., ILIESCU, V., BEVERLEY, P. C. L. (with Edwards, A. J.), Characterization of Epstein-Barr virus-specific memory T cells from the peripheral blood of seropositive individuals. *Br. J. Cancer,* 47 (1983), 681-6.

CRISPE, I. N., GASCOIGNE, N. R. J., OWENS, T., An allospecific murine T helper clone which can help both T and B cell responses *in vitro* and *in vivo. Immunology,* 52 (1984), 55-65.

CRISPE, I. N., LA THANGUE, N., Cancer is not due to the expression of introns. *J. Theor. Biol.* 107 (1984), 339-40.

CZITROM, A. A., GASCOIGNE, N. R. J., Primary T cell responses to minor alloantigens. I. Characterisation of cytotoxic effector cells generated from regional lymph nodes after immunization in the footpad. *Immunology,* 50 (1983), 121-9.

CZITROM, A. A., LIDDELL, M., Primary T cell responses to minor alloantigens. II. Analysis of accessory cell requirements for the development of cytotoxic T lymphocytes. *Immunology,* 50 (1983), 555-63.

DAVIES, H., Motile behaviour of the plasmatocytes of *EPHESTIA kühniella in vitro* and *in vivo. Dev. Comp. Immunol.,* 7 (1983), 679-82.

DAVIS, S. J. M., The advent of milk and wool production in western Iran: some speculations. *Animals and Archaeology,* 3 ed. C. Grigson and J. Clutton-Brock. Oxford: British Archaeological Reports, 1984.

Khirokitia and its mammal remains — a Neolithic Noah's ark. *Khirokitia.* Paris, Association pour la diffusion de la pensée Francaise, 1984.

By their garbage shall they be known. *New Sci.,* 100 (1983), 506-13.

The age profiles of gazelles predated by ancient man in Israel: possible evidence for a shift from seasonality to sedentism in the Natufian. *Paléorient.,* 9 (1983), 55-62.

DE PETRIS, S. (with Takacs, B.), Relationship between mouse lymphocyte receptors for peanut agglutinin (PNA) and Helix pomatia agglutinin (HPA). *Eur. J. Immunol.,* 13 (1983), 831-40.

FELDMANN, M. (and others), Role of aberrant HLA-DR expression and antigen presentation in induction of endocrine autoimmunity. *The Lancet,* 8359 (ii) (1983), 1115-19.

FISHER, R. C., The world of insects. Translated and adapted from: B. Bornancin *Peuple des insectes,* ed. Fernand Nathan. London: Burke, 1983, 1981, 32 pp.

Snails, worms and spiders. Translated and adapted from: B. Bornancin *Petite Faune* ed. Fernand Nathan, 1981, London: Burke, 1983, 32 pp.

FOX, H., *Amphibian Morphogenesis.* New Jersey: Humana Press, 1984. 320 pp.

FREEMAN, R. B., *British Natural History Books to 1900, in Foreign Printings.* London: UCL for the author, 1984. iv + 14 pp.

GASCOIGNE, N. R. J., CRISPE, I. N., Suppression of the cytotoxic T cell response to minor alloantigens *in vivo.* Linked recognition by suppressor T cells. *Eur. J. Immunol.* 14 (1984), 210-15.

Differential expression of the repertoire in *in vitro* and *in vivo* responses to minor alloantigens. *Immunogenetics,* 19 (1984), 511-17.

GASCOIGNE, N. R. J., LAI, P., T-helper cell lines that augment *in vivo* cytotoxic T-cell responses to minor alloantigens. *Cell Immunol.,* 83 (1984), 303-12.

GROEGER, B. K., O'DELL, D. S. (with Franz, H., Williams, D. J.), Tissue-specific binding of Ricin 120 and Mistletoe I lectins. *Eur. J. Cell Biol.,* 6 (1984), 9.

HOGG, N., Human monocytes are associated with the formation of fibrin. *J. Exp. Med.,* 157 (1983), 473-85.

HOLAN, V., MITCHISON, N. A., Haplotype-specific suppressor T cells mediating linked suppression of immune responses elicited by third-party H-2 alloantigens. *Eur. J. Immunol.,* 13 (1983), 652-7.

HOLAN, V., MITCHISON, N. A., Allospecific suppression without requirement for participation of Ly 2^+ cells. *Immunology,* 51 (1984), 469-75.

JAMES, R. F. L. (and others), Structure and expression of the human globin genes and murine histocompatibility antigens. *Cold Spring Harbor Symp. Quant. Biol.,* XLVII (1983), 1067-78.

(and others), Molecular cloning of H-2 class I genes in the $H\text{-}2^b$ haplotype. *Recent Advances in Immunology,* ed. A. U. Müftüoglu and N. Barlas. New York: Plenum Press, 1984, 69-75.

JAMES, R. F. L., MAUDSLEY, D. J., CULBERT, E. J., EDWARDS, S., SUNSHINE, G. H., FELDMANN, M. (with S. Kontiainen, S.), Monoclonal antibodies against Ia^+ antigen specific T cell factors. *Proc. 30th Colloq. Protides of the Biological Fluids,* ed. H. Peeters. UK: Pergamon Press, 1983, 477-82.

JAMES, R. F. L., SUNSHINE, G., EDWARDS, S., CULBERT, E., MAUDSLEY, D. J., KINGSBURY, A., FELDMANN, M. (with Kontiainen, S.), Activation of T helper cells

by a monoclonal antihelper factor antibody. *Interleukins, Lymphokines and Cytokines,* ed. J. J. Oppenheim and S. Cohen. New York: Academic Press, 1983, 245-60.

KANELLOPOULOS-LANGEVIN, C., PERKINS, A., MAYNARD, A. (with Mathieson, B. J., Asofsky, R.), Regulation of anti-hapten antibody responses *in vivo:* memory carrier-specific $Ly2^+$ T cells can terminate antibody production without altering the peak of response. *J. Immunol.,* 132 (1984), 1639-46.

KATZ, D. R., FELDMANN, M. (with Schreier, M., Tees, R.), Accessory cell heterogeneity and T helper clones. *Intercellular Communication in Leucocyte Function,* ed. J. W. Parker and R. L. O'Brien. New York: Wiley, 1983, 279-86.

KERMACK, K. A., The ear in the Theropsida. *Geobios,* mémoire spécial, 6 (1983), 151-6.

KERMACK, K. A., MUSSETT, F., The ear in mammal-like reptiles and early animals. *Acta palaeont. polonica,* Warsaw vol. 27, (1983), 147-58.

KING, C. A., PRESTON, T. M., MILLER, R. H., Cell-substrate interactions in amoeboid locomotion — a matched reflexion interference and transmission electron microscopy study. *Cell Biol. Int. Rep.,* 7 (1983), 641-9.

KING, C. A., COOPER, L., PRESTON, T. M., Cell-substrate interactions during amoeboid locomotion of *Naegleria gruberi* with special reference to alterations in temperature and electrolyte concentration of the medium. *Protoplasma,* 118 (1983), 10-18.

LA THANGUE, N. B., CHAN, W. L., The characterization and purification of DNA binding proteins present within Herpes simplex virus infected cells using monoclonal antibodies. *Arch. Virol.,* 79 (1984), 13-33.

LA THANGUE, N. B., CHAN, W. L. (with Almeida, J. D.), Monoclonal antibodies to Herpes simplex virus type 1 glycoproteins show that epitope location influences virus neutralization. *J. Med. Virol.,* 13 (1984), 227-42.

LA THANGUE, N. B., CHAN, W. L. (with Shriver, K., Dawson, C.), Herpes simplex virus infection causes the accumulation of a heat-shock protein. *EMBO J.,* 3 (1984), 267-77.

LAI, P. K., OWENS, T., Helper T cell lines to major and to minor histocompatibility antigens are equally effective in the regulation of B cell responses *in vivo. Cellular Immunol.,* 85 (1984), 406-16.

LAKE, P. (and others), Evidence for the erythrocyte as the principal antigenic cell type that triggers primary IgM antibody responses to H-2D alloantigens. *Transplant.,* 35 (1983), 180-4.

(and others), Cellular mechanisms of primary anti-Thy-1 antibody responses *in vitro* induced by uniquely immunogenic thymocyte antigens. *J. Immunol.,* 132 (1984), 1100-5.

LAMB, J. R. (with Green, N.), Analysis of the antigen specificity of influenza haemagglutinin-immune human T lymphocyte clones: identification of an immunodominant region for T cells. *Immunology,* 50 (1983), 659-66.

LAMB, J. R., FELDMANN, M., Essential requirement for major histocompatibility complex recognition in T cell tolerance induction. *Nature,* 308 (1984), 72-4.

(with Skidmore, B. J., Green, N., Chiller, J. M.), Induction of tolerance in influenza virus immune T lymphocyte clones with synthetic peptides of influenza haemmagglutinin. *J. Exp. Med.,* 157 (1983), 1434-47.

LAMB, J. R., ZANDERS, E. D., FELDMANN, M. (and others), Inhibition of T cell proliferation by antibodies to synthetic peptides. *Eur. J. Immunol.* 14 (1984), 153-7.

LAMB, J. R., ZANDERS, E. D., FELDMANN, M., BEVERLEY, P. C. L. (and others), The dissociation of interleukin-2 production and antigen-specific helper activity by clonal analysis. *Immunology,* 50 (1983), 397-405.

LAWSON, D., Epinemin: a new protein associated with vimentin filaments in non-neural cells. *J. Cell Biol.,* 97 (1983), 1891-905.

MILLER, R. H., RAFF, M. C., Fibrous and protoplasmic astrocytes are biochemically and developmentally distinct. *J. Neurosci.,* 4 (1984), 585-92.

MITCHELL, D. M., BEVERLEY, P. C. L., BOYLE, D. G., WINGER, L. A., CALLARD, R. E., Accessory cell and HLA compatibility requirements for the generation of specific *in vitro* antibody responses to influenza virus by human blood lymphocytes. *Immunology,* 50 (1983), 239-50.

MITCHELL, D. M., CALLARD, R. E., Fine specificity of the *in vitro* antibody response to influenza virus by human blood lymphocytes. *J. Immunol.,* 131 (1983), 1229-33.

MITCHISON, N. A., Immunoregulation: issues of the day. *Progress in Immunology,* V, ed. Y. Yamamura and T. Tada. Japan: Academic Press, 1984, 1025-9.

Linked help in the cytotoxic T cell response revealed by adoptive transfer. *Transplantation Proc.,* XV (4) (1983), 2121-4.

MOSS, F. M., ACRES, R. B., SOUHAMI, R. L., LAMB, J. R., Heterogeneity of specificity of oligoclonal human T lymphocyte lines induced with autologous pulmonary tumour. *Br. J. Cancer,* 49 (1984), 659-61.

MUDGE, A. W., Schwann cells induce morphological transformation of sensory neurones *in vitro. Nature,* 309 (1984), 367-8.

O'DELL, D. S. (and others), Olfactory neurons in cell culture. *Neuroscience Letters,* 14 (1983), 83.

OWEN, M. J., Synthetic peptides and their impact on immunology. *Immunology Today,* 4 (1983), 190-1.

OWENS, T., LIDDELL, M. E., CRISPE, I. N., Derivation from an alloreactive T cell line of a clone which cross-reacts with a self H2-E-restricted minor alloantigen. *Cellular Immunol.,* 85 (1984), 436-46.

PRESTON, T. M., KING, C. A., Binding sites for bacterial flagella at the surface of the soil amoeba *Acanthamoeba. J. Gen. Microbiol.,* 130 (1984), 1449-58.

RAFF, M. C. (and others), *The Molecular Biology of the Cell.* New York: Garland Publishing, 1983. 1146 pp.

RAFF, M. C., MILLER, R. H., NOBLE, M. D., Glial cell lineages in the rat optic nerve. *Cold Spring Harbor Symp. Quant. Biol.,* XLVIII (1983), 569-72.

ROWE, D. J., BEVERLEY, P. C. L., Characterisation of breast cancer infiltrates using monoclonal antibodies to human leucocyte antigens. *Br. J. Cancer,* 49 (1984), 149-59.

ROUGON, G., NOBLE, M., MUDGE, A. W., Neuropeptides modulate the beta-adrenergic response of purified astrocytes *in vitro. Nature,* 305 (1983), 715-17.

SUNSHINE, G. H., CZITROM, A. A., EDWARDS, S., FELDMANN, M., KATZ, D. R., Antigen presentation by dendritic cells. *Recent Advances in Immunology,* ed. A. U. Müftüoglu and N. Barlas. New York: Plenum Press, 1984, 23-8.

WHITEAR, M., The question of free nerve endings in the epidermis of lower vertebrates. *Acta biol. hung.,* 34 (1983), 303-19.

WHITEAR, M. (with Mittall, A. K.), Fine structure of the club cells in the skin of ostariophysan fish. *Z. mikrosk.-anat. Forsch.,* 97 (1983), 141-57.

WHITEAR, M., LANE, E. B., Multivillous cells: epidermal sensory cells of unknown function in lamprey skin. *J. Zool. Lond.,* 201 (1983), 259-72.

WINCHESTER, G., SUNSHINE, G. H., NARDI, N., MITCHISON, N. A., Antigen-presenting cells do not discriminate between self and non-self. *Immunogenetics,* 19 (1984), 487-91.

WOOD, J. B., The conservation and management of animal populations. *Conservation in Perspective,* ed. D. Warren and F. B. Goldsmith. Chichester: Wiley, 1983, 119-39.
Management plans. *Ibid.,* 247-66.
(with Goldsmith, F. B.), Ecological effects of upland afforestation. *Conservation in Perspective,* ed. D. Warren and F. B. Goldsmith. Chichester: Wiley, 287-311.

FACULTY OF ENGINEERING

CHEMICAL AND BIOCHEMICAL ENGINEERING

AYAZI SHAMLOU, P., Mixing of cement-based grouts in the construction industry. Fluid Mixing II. *Instn Chem. Engrs Symp. Ser.* No. 89 (1984), 15-27.
Fine solids suspension and rheology. *The Chem. Engr,* No. 403 (1984), 31-4.

BARRETO, G. F., YATES, J. G., ROWE, P. N., The effect of pressure on the flow of gas in fluidized beds of fine particles. *Chem. Engng Sci.,* 38 (1983), 1935-45.

BELL, D. J., DUNNILL, P., Mechanisms for the acoustic conditioning of protein precipitates to improve their separation by centrifugation. *Biotechnol. Bioengng,* 26 (1984), 691-8.

BROAD, D. F., FOULKES, J., DUNNILL, P., The uptake of *Aspergillus ochraceus* spores on diatomaceous particles and their use in the 11α-hydroxylation of progesterone. *Biotechnol. Lett.,* 6 (1984), 357-62.

CHIBA, T., NIENOW, A. W., Defluidisation of large particles due to segregation. *Proc. 4th Int. Conf. Fluidization, Japan, May-June 1983.* New York: Engineering Foundation, 1984, 195-202.

DEVEREUX, N., HOARE, M., DUNNILL, P., BELL, D. J., The development of improved methods for the industrial recovery of protein precipitates. *Solid-liquid Separation,* ed. J. Gregory. Society of Chemical Industry/Ellis Horwood, 1984, 143-60.

DUNNILL, P., The future of biotechnology. *Biotechnology,* ed. C. F. Phelps and P. H. Clarke (Biochem. Soc. Symp., No. 48). London: The Biochemical Society, 1983, 9-23.
Trends in downstream processing of proteins and enzymes. *Process Biochem.,* 18 (5) (1983), 9-13.
Biotechnology and British industry. *Chem. & Ind.,* No. 13 (1984), 470-5.

DUNNILL, P., RUDD, M., *Biotechnology and British Industry.* Swindon: Science and Engineering Research Council, 1984. 89 pp.

FISH, N. M., LILLY, M. D., The interactions between fermentation and protein recovery. *Bio/Technology,* 2 (1984), 623-8.

FOSCOLO, P. U., GIBILARO, L. G., WALDRAM, S. P., A unified model for particulate expansion of fluidised beds and flow in fixed porous media. *Chem. Engng Sci.,* 38 (1983), 1251-60.

GIBILARO, L. G., WALDRAM, S. P., FOSCOLO, P. U., A simple mechanistic description of the unsteady state expansion of liquid fluidised beds. *Chem. Engng Sci.,* 39 (1984), 607-10.

HOARE, M., BELL, D. J., DUNNILL, P., Reactor design for protein precipitation and its effect on centrifugal separation. *Biochemical Engineering III,* ed. K. Venkatasubramanian, A. Constantinides and W. R. Vieth. The New York Academy of Sciences, 1983, 254-69.
The effect of reactor conditions on the properties of protein precipitates. *Proc. Symp. on Tailoring of Crystal Growth, Manchester, 1982,* ed. J. Garside. Manchester: Instn Chem. Engrs North Western Branch Papers No. 2, 1983, 5.1-11..

JONES, A. G., Design and performance of batch crystallizers. *Proc. Symp. on Tailoring of Crystal Growth, Manchester, 1982,* ed. J. Garside. Manchester: Instn Chem. Engrs North Western Branch Papers No. 2, 1983, 4.1-15.

KLOOSTERMAN IV, J., LILLY, M. D., Effect of supersaturated aqueous hydrocortisone concentrations on the Δ^1-dehydrogenase activity of free and immobilised *Arthrobacter simplex. Enzyme Microb. Technol.,* 6 (1984), 113-16.

KUBOTA, N., An attempt to explain the waiting time distribution for primary nucleation of potassium sulphate from aqueous solution by a stochastic model. *J. Cryst. Growth,* 62 (1983), 161-6.

KUBOTA, N., MULLIN, J., On the decreasing number of potash alum small crystals suspended in an agitated supersaturated solution. *J. Cryst. Growth,* 66 (1984), 676-8.

LILLY, M. D., Problems in process scale-up. *Bioactive Microbial Products 2, Development and Production,* ed. L. J. Nisbet and D. J. Winstanley. London: Academic Press, 1983, 79-89.

MULLIN, J. W. (with Söhnel, O.), Precipitation of calcium carbonate. *J. Cryst. Growth,* 60 (1982), 239-50.

NIENOW, A. W., KILLICK, R. C., The effect of distributor type on the efficiency of fluidised bed gas cleaning. *A.I.Ch.E. Symp. Series No. 222,* 79 (1983), 1-18.

OBENG, E. D. A., HOARE, M., Heat transfer to protein concentrates. *1st UK Conf. on Heat Transfer, Instn Chem. Engrs Symp. Series No. 86,* 2 (1984), 1213-22.

ROWE, P. N., Fluidized-bed reactors. Chemical Reaction Engineering — Plenary Lectures. *A.C.S. Symp. Series 226,* ed. J. Wei and C. Georgakis. Washington: American Chemical Society, 1983, 49-63.

The effect of pressure on minimum fluidisation velocity. *Chem. Engng Sci.,* 39 (1984), 173-4.

ROWE, P. N., FOSCOLO, P. U., HOFFMANN, A. C., YATES, J. G., X-ray observation of gas fluidised beds under pressure. *Proc. 4th Int. Conf. on Fluidization, Japan, May-June 1983.* New York: Engineering Foundation, 1984, 53-60.

SMITH, P. G., NIENOW, A. W., Particle growth mechanisms in fluidised bed granulation — I: The effect of process variables. *Chem. Engng Sci.,* 38 (1983), 1223-31.

II: Comparison of experimental data with growth models. *Ibid.,* 1233-40.

TWINEHAM, M., HOARE, M., BELL, D. J., The effects of protein concentration on the break-up of protein precipitate by exposure to shear. *Chem. Engng Sci.,* 39 (1984), 509-13.

WALDRAM, S. P., Chemical reaction engineering: an equilibrium calculation. *The Chem. Engr,* No. 396 (1983), 16-17.

Chemical reaction engineering: design of an ideal plug flow reactor. *Ibid.,* No. 397 (1983), 35-42.

Chemical reaction engineering: the non-ideal reactor. *Ibid.,* No. 400 (1984), 14-16.

Chemical reaction engineering: introducing economic considerations. *Ibid.,* No. 401 (1984), 41-3.

YANG, XIAO-TIAN, HORNE, D. G., YATES, J. G., ROWE, P. N., An experimental study of reaction in the distributor region of a fluidized bed reactor. *11th Ann. Res. Mtg, Instn Chem. Engrs, Bath, April 1984.* Instn Chem. Engrs South Western Branch, 1984, 211-16.

YATES, J. G., Fluidized beds — combustion and applications. *Chem. Engng J.,* 28 (1984), 69-70.

Using gas fluidisation: a blow by blow account. *Process Engng,* 65 (July 1984), 33-6.

YATES, J. G., CHEESMAN, D. J., MASHINGAIDZE, T. A., HOWE, C., JEFFERIS, G., The effect of vertical rods on bubbles in gas-fluidized beds. *Proc. 4th Int. Conf. on Fluidization, Japan, May-June 1983.* New York: Engineering Foundation, 1984, 103-10.

ALLSOP, R. E., Directions in transport research. *Proc. 8th Int. Symp. Transportation and Traffic Theory,* ed. Hurdle, Hauer and Steuart. Toronto University, 1983, 700-3.

Fares and road casualties in London. *Fares and Road Casualties.* Greater London Council, 1983.

Optimisation of timings of traffic signals. *Conf. AIRO 83, Naples, September 1983,* 103-20.

Transport Studies Group UCL Progress Report. *Traffic Engng & Control,* 25 (1983), 82-7.

BELL, M. G. H., The estimation of an origin destination matrix from traffic counts. *Transportation Sci.,* 17 (1983), 198-217.

COLLINGS, A. G., JOHNSON, E. R., Discussion on a paper by D. D. Liou. *Earthquake Engng & Structural Dynamics,* 11 (1983), 437-8.

COLLINGS, A. G., TEE, G. J., Discussion on a paper by I. A. Macleod and G. Ticcioni. *Engng Structures,* 6 (1983), 150.

CROLL, J. G. A., Structural integrity of irradiated fuel transportation flasks. Proof of Evidence GLC/P/8, Sizewell 'B' Power Station, Public Inquiry, February 1984.

CROLL, J. G. A., DE SOUZA, V. C. M., Vibration tests on thin-cylindrical shells. *Exptl. Techniques* (Jan. 1984), 21-3.

CROLL, J. G. A., DUMITRESCU, J. A., BILLINGTON, D. P., Cooling towers on flexible foundations. *J. Struct. Engng,* ASCE, 109 (1983), 2248-64.

CROLL, J. G. A., ELLINAS, C. P., A design formulation for lower bounds to collapse of stiffened and unstiffened cylinders. *Proc. 3rd Int. Colloq. Stability of Metal Structures, Paris, 16-17 November 1983,* 157-68.

Experimental and theoretical correlations for the buckling of axially compressed ring stiffened cylinders. *J. Strain Anal.,* 18 (1983), 81-93.

A design-formulation for axisymmetric collapse of stiffened and unstiffened cylinders. *3rd Int. Symp. Offshore Mechanics and Arctic Engineering,* ASME, New Orleans, 12-16 February 1984.

DE CEA, J., ORTUZAR, J. DE D., WILLUMSEN, L. G., Socio-economic evaluation of an extension to the Santiago Metro. *63rd Transportation Res. Board Ann. Mtg, Washington, D.C., January 1984.*

Marginal demand estimation: an appropriate technology for investment appraisal. *PTRC Summer Ann. Mtg, Brighton, July 1984.*

DOMONE, P. L., GANDHI, D., Materials for repair of offshore structures, 2: initial experimental results. *SERC London Centre for Marine Technology Report* No. MC33, September 1983.

DOMONE, P. L., THURAIRATNAM, H., Cement grouts for offshore structures, 2: rheology of cement paste. *SERC London Centre for Marine Technology Report* No. MC35, May 1984.

Cement grouts for offshore structures, 1: review of current practice. *Ibid.,* No. MC34, July 1984.

FERGUSON, G. J. W. A., MOGRIDGE, M. J. H., Is car-ownership stagnating? Fuel consumption models and their implications. *10th Coll. Vervoersplanologisch Speurwerk: Transportation & Stagnation — Challenges for Planning and Research. Zandvoort, Holland, December 1983.*

GALLIVAN, S., Delay and capacity at a junction with traffic signals when saturation flow varies with green time. *Conf. AIRO 83, Naples, September 1983,* 723-44.

GALLIVAN, S., ALLSOP, R. E., The microcomputer in traffic management. *PTRC Summer Ann. Mtg, Brighton, July 1984.*

GRASS, A. J., RAVEN, P. W. J., STUART, R. J., BRAY, J. A., The influence of boundary layer velocity gradients and bed proximity on vortex shedding from free spanning pipelines. *J. Energy Resources Technology, Trans. ASME,* 106 (1984), 70-8.

GREGORY, J., Flocculation and filtration of colloidal particles. *Empergent Processes for High Technology Ceramics,* ed. R. F. Davis. New York: Plenum, 1984, 59-70.

GREGORY, J., DE MOOR, A. E. L., Filtrability of polymer-flocculated suspensions. *Polymer Adsorption and Dispersion Stability, ACS Symp. Ser.* 240 (1984), 445-8.

GREGORY, J., NELSON, D. W., A new optical method for flocculation monitoring. *Solid-Liquid Separation,* ed. J. Gregory. Chichester: Ellis Horwood, 1984, 172-82.

HEYDECKER, B. G., A note on the interpretation of the dual variables in estimating traffic capacity at signal-controlled road junctions. *Transportation Res.,* B, 17 (1983), 359-64.
Capacity at a signal-controlled junction where there is a priority for buses. *Ibid.,* 341-57.
Some consequences of detailed junction modelling in road traffic assignment. *Ibid.,* 263-81.

IVES, K. J., Experiments in orthokinetic flocculation. *Solid-Liquid Separation,* ed. J. Gregory. Chichester: Ellis Horwood, 1984.
Editor, *The Scientific Basis of Flotation.* The Hague: Martinus Nijhoff, 1984.

IVES, K. J., SEMBI, S., Optimisation of size-graded water filters. *Filt. Sep.,* 20 (1983), 376-80.

KEMP, K. O., EYRE, J. R., A graphical solution for predicting the increase in strength of concrete slabs due to membrane action. *Magazine of Concrete Res.,* 35 (1983), 151-6.

KEMP, P. H., SIMONS, R. R., Sediment transport due to waves and tidal currents. *Proc. Symp. Seabed Mechanics, Newcastle, September 1983.*

MOGRIDGE, M. J. H., If London is more spread out than Paris why don't Londoners travel more than Parisians? *2nd Int. Congr. Arts and Science, Rotterdam, June 1984.*

RADOVANAC, M., Transferability of the UMOT model: tests on two Yugoslav cities. *PTRC Summer Ann. Mtg, Brighton, July 1984.*

THOMPSON, J. M. T., Sir Isaac Newton's pendulum experiments on fluid damping. *IMA Bull.,* 20 (1984), 8-11.

THOMPSON, J. M. T., BOKAIAN, A. R., GHAFFARI, R., Subharmonic resonances and chaotic motions of a bilinear oscillator. *IMA J. Appl. Math.,* 31 (1983), 207-34.

THOMPSON, J. M. T., HUNT, G. W., *Elastic Instability Phenomena.* Chichester: Wiley, 1984.

WARD, H., Area-wide urban safety schemes — methods of assessing their effectiveness. *Conf. Recent Developments and Research in Road Safety Remedial Measures, University of Salford, September 1983.*

WILLUMSEN, L. G., Microcomputers and their software for transport planning in developing countries. *PTRC Summer Ann. Mtg, Brighton, July 1984.*
Estimating time-dependent trip matrices from traffic counts. *9th Int. Symp. on Transportation and Traffic Theory, Delft, July 1984.*

YARIMER, E., Statistical parameter uncertainty, information level and reliability assessment. *Reliability Theory and its Application in Structural and Soil Mechanics,* ed. P. Thoft-Christensen. The Hague: Martinus Nijhoff, 1983, 510-23.

ELECTRONIC AND ELECTRICAL ENGINEERING

ASH, E. A., Rayleigh wave suppression in reflection acoustic microscopy. *Electron. Letts,* 19 (1983), 906-8.

BETTS, R. A., Fabrication techniques for integrated optics devices. *Phys. Technol.,* 14 (1984), 194-8.

BETTS, R. A., PITT, C. W., RIDDLE, K. R., WALPITA, L. M., A comparative study of the Dopant profiles in diffused planar optical waveguides by SIMS and guided wave probe. *Applied Physics,* A, 31 (1983), 29-35.

BOND, L. J., BLAKE, R. L., Ultrasonic elastic wave model studies. *Proc. Ultrasonics Int '83, Halifax, Canada.* Guildford: Butterworth, 1983, 452-7.

BOND, L. J., PUNJANI, M., New multi-transducer techniques for crack characterisation. *Review of Progress in Quantitative Nondestructive Evaluation,* vol. 3A, ed. D. O. Thompson and Dale E. Chimenti. New York/London: Plenum Press, 1983, 297-308.

BOND, L. J., PUNJANI, M., SAFFARI, N., Review of some recent advances in quantitative ultrasonic NDT. *Proc. IEE,* Pt A, 131 (4) (1984), 265-74.

BOND, L. J., SAFFARI, N., Mode-conversion ultrasonic testing. *Research Techniques in Non-destructive Testing,* vol. 7, ed. R. S. Sharpe. London/New York: Academic Press, 1984, 145-89. (ch.5.)

Defect characterisation in turbine discs. *Review of Progress in Quantitative Nondestructive Evaluation,* vol. 3A, ed. D. O. Thompson and Dale E. Chimenti. New York/London: Plenum Press, 251-62.

BURTON, N. J., PINO, F., SIVAPRAKASAPILLAI, P., NIKOONAHAD, M., Digital image processing for scanning acoustic microscopy. *Special Issue of IEEE SU on Digital Ultrasonic Imaging, 1983* (July 1984).

CALMON, L. C., SMITH, M. S., Near fields of antennas on structures. *IEEE AP-S Int. Symp. Digest* (June 1984), 405-8.

CULLEN, A. L., Millimetre-wave open resonator techniques. *Infrared and Millimeter Waves,* vol. 10, ed. K. J. Button. London: Academic Press, 1983, 233-81.

DAVIES, D. E. N., The people that measured in darkness have seen a great light. *Proc. roy. Instn.* 55 (1983), 229-47.

Opto-electronics — a new dimension in electronics. *The Radio and Electronic Engnr,* 54, No. 1 (1984), 1-9.

Presidential address to the Institution of Electronic and Radio Engineers, 27 October 1983. London: IERE, 1983.

Coherent optical-fibre transversal filter. *Proc. 1984 Conf. Lasers & Electro-optics, Anaheim, California, June 1984,* 198-9.

DAVIES, D. E. N., GUY, J. R. F., A novel method of multiplexing radiocommunication antennas using a circular array configuration. *IEE Microwaves, Optics and Antennas,* 130, pt H, No.6 (1983), 410-14.

DAVIES, D. E. N., JAMES, G. W., A fibre optic tapped delay line filter. *Electron. Letts,* 20 (1984), 95-7.

DAVIES, J. B. (with Chua, Y. L., Mirshekar-Syahkal, D.), An accurate bivariate formulation for computer-aided design of circuits including microstrips. *IEEE Trans.* MTT-31 (1983), 685-7.

DAVIES, J. B., RAHMAN, B. M. A., Analysis of open optical and microwave guides of arbitrary transverse permittivity profiles. *URSI Symp. Electromagnetic Theory, August 1983,* 503-6.

DAVIES, O. J., OBAC-RODA, V. (with Lombardi, F.), Analysis and implementation of static and dynamic fault tolerant ring systems. *Proc. 21st Ann. Allerton Conf. (Illinois, USA) on Communication, Control & Computing, October 1983.*

FLANAGAN, M. T., Electronic sensors. *Charge and Field Effects in Biosystems,* ed. M. J. Allen. Tunbridge Wells: Abacus Press, 1984, 419-29.

FONG, A. K. S., SMITH, M. S., A microstrip multiple beam forming lens. *The Radio and Electronic Engnr,* 54 (1984), 318-20.

FORREST, J. R., Optical effects in GaAs MESFETS. *Applications of GaAs MESFETS,* ed. R. Soares, J. Graffeuil and J. Obregon. Dedham, USA: Artech House, 1983, (ch.10.)
Some considerations for low probability of intercept radar. *Defence Electronics,* 15 (1983), 97-103.
Antenna design tradeoffs examined. *Microwave System Designers Handbook* (1983), 237-43.
Communication avec les mobiles. *Proc. French National Microwave Conf. (JNM), Lannion, June 1984.* Invited paper I-2, 10-16.
Optoelectronics in practice and promise. *GEC J. Res.,* 2, No.2 (1984), 62-5.
Active phased arrays for multi-beam earth coverage. *Annales des Telecommunications,* 39 No.1-2 (1984), 69-75.
(with Daniel, J. P., Van de Capelle, A.), Microstrip patch arrays for satellite communications. *Proc. ESA/COST 204 Phased Array Workshop,* ESA Publ. No. SP-204 (1983), 9-14.
FORREST, J. R., SHEEHAN, P. (with Roederer, A., Molker, A.), L-Band arrays for mobile communications. *Proc. ESA/COST 204 Phased Array Antenna Workshop.* ESA Publ. No. SP-204 (1983), 21-7.
GRUNFELD, F., PITT, C. W., Diacetylene Langmuir-Blodgett layers for integrated optics. *Thin Solid Films,* 99 (1983), 137-46.
GUO, Y. C., SMITH, M. S., Sidelobe reduction for phased array antennas using digital phase shifter, I: one bit phase weighting. *Proc. IEE* 130, Pt H, (1983), 343-51.
II: Two bit phase weighting. *Ibid.,* 353-7.
JAYASUNDERE, N., BOND, L. J., Piezoelectric transducer disc resonances. *Non Destructive Testing Communications.* 1, (1984), 111-21.
JOHNSON, N. D., A new reflection lens for acoustic microscopy. *Proc. Ultrasonics Symp., Oct. 31, Nov. 1, 2, 1983,* 641-4.
KENSHOLE, G. E. (with Li, C. J., Toro, C. R., Loferski, J. J.), Diffusion of copper and other effects in the chemical vapour deposition of cadmium sulphide on single crystal copper indium selenide substrates. *Proc. 5th Europ. Communities Photovoltaic Solar Energy Conf.,* ed. W. Palz and F. Fittipaldi. Athens: Kavouri, 1983, 65-71.
LYNCH, A. C., Measurement of permittivity using an open resonator. *Proc. IEE,* 130, Pt A, (1983), 365-8.
(with Drake, A. E., Dix, C. H.), Measurement of eddy-current conductivity. *Proc. IEE,* 130, Pt A, (1983), 254-60.
MEDEIROS FILHO, F. C., JAYASURIYA, D. A. R., COLE, R. S., Tropospheric effects on line-of-sight links at 36GHz and 55GHz. *Proc. IEE,* Pt F, 130 (1983), 679-87.
(with Helmis, C. G.), Spectral density of millimetre wave amplitude scintillations in an absorption region. *Trans. IEEE Antennas and Propagation* AP-31 (1983), 672-6.
NIKOONAHAD, M., YUE, G. Q., ASH, E. A., Subsurface broadband acoustic microscopy of solids using reduced aperture lenses. *Review of Progress in Quantitative Nondestructive Evaluation,* vol. 2B, ed. D. O. Thompson and E. Dale. Chimenti. New York/London: Plenum Press, 1982, 1611-23.
NIKOONAHAD, M., Reflection acoustic microscopy for industrial NDE. *Research Techniques for Nondestructive Testing,* vol.7, ed. R. S. Sharpe. New York: Academic Press, 1984, 217-57. (ch.7.)
Recent advances in high resolution acoustic microscopy. *Contemp. Phys.,* 25 (2) (1984), 129-58.
High frequency acoustic microscopy using pulse compression. *Proc. Ultrasonics Symp. Oct. 31, Nov. 1, 2, 1983,* 616-20.

Pulse compression acoustic microscopy at 750 MHz. *Electron. Letts,* 19 (1983), 782-4.
NIKOONAHAD, M., SIVAPRAKASAPILLAI, P., ASH, E. A., Rayleigh wave suppression in reflection acoustic microscopy. *Electron. Letts,* 19 (1983), 906-8.
PARRY, G. (with Miller, A.), Optical bistability in semi-conductors with density dependent carrier lifetimes. *J. Optical and Quantum Elect.,* 16 (1984), 339-48.
(with Miller, A., Daley, R.), Non-linear Fabry-Perot transmission in a CdHgTe etalon. *Optical Bistability,* vol.2, ed. C. M. Bowden, H. M. Gibbs and S. M. McCall. New York: Plenum Press, 1984, 289-96.
(with Miller, A., Daley, R.), Low power nonlinear Fabry-Perot reflection in CdHgTe at 10um. *IEEE J. Quant. Elect.,* QE-20, No.7 (1984), 710-15.
(with Miller, A., Matthew, J. G. H., Craig, D.), Band-gap resonant Fabry-Perot nonlinearities and two-photon induced optical switching in CdHgTe. *Tech. Digest 13th Int. Conf. Quantum Electronics (IQEC 84), Tu EE2, Anaheim* (1984).
PITT, C. W., Materials and fabrication techniques for integrated optics: organic and amorphous materials. *J. Non-crystalline Solids,* 47, 2 (1982), 159-74.
Langmuir-Blodgett films — the ultrathin barrier. *Electronics & Power* (March 1983), 25-9.
Use of thin films in optical waveguiding devices — a case study. *Vacuum,* 34, 3-4 (1984), 399-403.
(with Faik, A., Allen, L., Eicher, C., Gagola, A., Townsend, P. D.), Dispersion and luminescence of optical waveguides. *J. Appl. Phys.,* 54, 5 (1983), 2597-601.
(with Roberts, G. G.), Editors, *Thin Film Science and Technology,* vol.3. Oxford: Elsevier Scientific, 1983.
PITT, C. W., GRUNFELD, F., Organic thin films in integrated optics. *SPI Proc. Thin Film Technologies,* 401 (1983), 156-64.
PITT, C. W., SKINNER, J. D. (with Townsend, P. D.), Acousto-optic diffraction of optical guided waves in crystal quartz. *Electron. Letts,* 20 (1984), 4-5.
RAHMAN, B. M. A., DAVIES, J. B., Finite-element analysis of optical and microwave waveguide problems. *IEEE Trans.,* MTT-32 (1984), 20-8.
SAFFARI, N., BOND, L. J., Mode-conversion phenomena at surface breaking cracks for defect characterisation. *Paper Q3, Proc. IEEE Ultrasonics Symp. October 31-November 2, Atlanta, Georgia, USA* (1983) 960-4.
SHEEHAN, P. G., FORREST, J. R., The use of optical techniques for beam forming in phased arrays. *Proc. SPIE Conf. 477, Optical Technology for Microwave Applications* (1984), 82-9.
SIVAPRAKASAPILLAI, P., NIKOONAHAD, M., ASH, E. A. Suppression and filtering of Rayleigh waves in reflection acoustic microscopy. *Proc. Ultrasonics Symp., Oct. 31, Nov. 1, 2, 1983,* 632-6.
SMITH, M. S., A frequency scanned circular array. *Electron. Letts,* 19 (1983), 898-9.
SMITH, M. S., FONG, A. K. S., Amplitude performance of Ruze and Rotman lenses. *The Radio and Electronic Engnr,* 53 (1983), 329-36.
SMITH, M. S., GUO, Y. C., A comparison of methods for randomising phase quantisation errors in phased arrays. *IEEE Trans.* AP-31 (1983), 821-8.
SMITH, M. S., TAN, T. G., Sidelobe reduction using random methods for antenna arrays. *Electron. Letts,* 19 (1983), 931-3.
TAYLOR, W. K., Review of *Robot Motion,* ed. M. Brady, J. M. Hollerbach, T. L. Johnson, T. Lorano-Perez and M. T. Mason. *Robotica,* 1 (1983), 242.
TAYLOR, W. K., LAVIE, D., A microprocessor-controlled real time image processor. *Proc. IEE,* 130, Pt E, No. 5 (1983).

WANG, W. L., SMITH, M. S., Sidelobe reduction for a microstrip travelling wave antenna array using partially random weighting. *Electron. Letts,* 20 (1984), 126-8.

WARD, C. J., FORREST, J. R., Fast acquisition phase-locked loops for frequency agile pulsed radar systems. *Proc. IEE,* 130, Pt H (1983), 489-94.

WILKINSON, J. S., Integrated optics devices. *Phys. Technol.,* 14, No.4 (1984), 190-3.

WILKINSON, J. S., WILSON, M. G. F., Theoretical and experimental investigation of a stepped delta beta directional coupler having a high extinction ratio, *2nd Europ. Conf. Integrated Optics, IEE publication 227,* (1983), 122-5.

WILSON, M. G. F., CHAN WONG, S. W., Theory of integrated-optic diffraction gratings in low Δn waveguides. *Electron. Letts,* 19, (1983), 943-4.

YEO, S. P., CULLEN, A. L., Theory of symmetrical five-port junction. *Electron. Letts,* 20 (1984), 38-9.

Electromagnetic model of symmetrical five-port waveguide junction. *Ibid.,* 214-15.

MECHANICAL ENGINEERING

ANDREWS, D. A., Discussion to various papers. *Trans. RINA,* 124 (1983), 57-8, 75, 107-8; 125 (1983), 170-1, 192, 336, 351.

Discussion to paper No.27. *Trans. Mar. Engrs,* 16.

Discussion to various papers. *Int. Marine Systems Design Conf., April 1982, Pt 2.* London: Royal Institution of Naval Architects, 1983, 5-6, 39.

(with Brown, D. K.), Cheap warships are not simple. *Symp. Ship Costs and Energy, New York, Sept. 1982.* New York: SHAME, 1983.

BROOME, D. R. (with Long, J., Martin, J.), The division of attention between a primary tracking task and secondary tasks of pointing with a stylus or speaking in a simulated ship's gun-fire control task. *Ergonomics,* 27 (1984), 397-408.

(with Rush, J. B. R.), Spectral analysis of ship steering as a guide to fuel cost. *Proc. 9th Canadian Congr. Applied Mechanics, Saskatoon,* 1983, 827.

BROOME, D. R., IHNATOWICZ, E., A new device for the improved operation of remote manipulators. *Proc. 6th IFTOMM Congr., New Delhi, 1984.*

BROOME, D. R., WRAY, A. M., IHNATOWICZ, E., Development of a manipulator for automated inspection of subsea structures. *Proc. Conf. ROV 84, San Diego, 1984.*

CLAYTON, B. R., Contributions to: *Proc. Conf. Marine Survival Craft.* London: RINA, 1983, Papers 3, 5, 8 and 11.

Proc. 5th Lips Prop. Symp., Netherlands (1983), Paper 1, Discussion Vol.1-3.

Secrets of the seabed. *Northampton and Country Independent,* 72, 3123 (1983), 98-9.

Review of British Wind Energy Association, *Wind Energy for the Eighties. J. Ambient Energy,* 5 (1984), 45-6.

(with Nance, C. T.), Wind assisted ship propulsion. *Rep. British Wind Energy Assoc.* (June 1984), 40 pp.

(with Tuckey, P. R.), Recent hovercraft research in the United Kingdom — experimental work and facility related to hovercraft dynamics. *High-Speed Surface Craft,* 23, 1 (1984), 28-33.

(with Tuckey, P. R.), Recent hovercraft research in the United Kingdom — analytical work related to hovercraft dynamics. *High-Speed Surface Craft,* 23, 2 (1984), 24-30.

COLLINS, R., MIRSHEKAR-SYAHKAL, D. (with Michael, D. H.), Surface current distributions around surface flaws in metals. *Proc. Roy. Soc.,* A, 393 (1984), 159-70.

CORRAN, R. S. J. (with Mines, R. A. W., Ruiz, C.), Elastic impact loading of notched beams and bars. *Int. J. Fracture* (1983), 129-44.

(and others), Towards the development of a dynamic fracture initiation test. *Application of Fracture Mechanics to Materials and Structures,* ed. G. C. Sih, E. Sommer and W. Dahl. The Hague: Martinus Nijhoff, 1984, 443-54.

DHARMAVASAN, S., Fatigue crack growth predictions in tubular welded joints. *Proc. Conf. Offshore and Coastal Processes, Polymodel 7, Sunderland, May 1984.*

DHARMAVASAN, S., DOVER, W. D., Stress distribution formulae and comparison of three stress analysis techniques for tubular joints. *Proc. 3rd Int. Symp. Offshore Mechanics and Arctic Engineering, ASME, New Orleans, Feb. 1984.*

DOVER, W. D., Computer controlled monitoring of the fatigue crack shape. *ICF Int. Symp. Fracture Mechanics, Beijing, China, Nov. 1983.*

DOVER, W. D., DHARMAVASAN, S., Fatigue analysis of tubular joints using fracture mechanics. *Offshore China 83, Guangzhou, China, Nov. 1983.*

EATOCK TAYLOR, R. (with Drake, K. R.), Design considerations for articulated columns. *Proc. Int. Symp. Developments in Floating Production Systems, Roy. Instn Naval Architects, March 1984,* Paper 16.

(with Drake, K. R., Duncan, P. E.), The dynamics of a flexible articulated column in waves. *Eng. Struct.,* 5 (1983), 181-98.

(with Rajagopalan, A.), Load spectra for slender offshore structures in waves and currents. *Earthquake Eng. Struct. Dyn.,* 11 (1983), 831-42.

(with Rajagopalan, A.), Nonlinearities affecting the response of fixed offshore structures to random waves. *Proc. 2nd Indian Conf. Ocean Engineering, CWPRS, Poona, 1983.*

(with Zhu, R. G.), Numerical analysis of elasto-plastic thick plate impact. *Proc. 9th Canadian Congr. Applied Mechanics,* ed. H. T. Danyluk and P. B. Hertz. University of Saskatchewan, 1983, 349-50.

(with Zietsman, J.), Non-uniqueness in finite element and boundary integral coupled formulations for hydrodynamics analysis. *Proc. FEMSA 84, South African Institute of Aeronautical Engineers,* 1984, 538-61.

JEFFREYS, E. R., Simulation of wave power devices. *Appl. Ocean Res.,* 6, No.1 (1984), 31-9.

(with Mavrommatakis, M.), Control of marine structures. *Proc. ASME Conf. Offshore Mechanics and Arctic Engineering, New Orleans, February 1984.*

JEFFREYS, E. R., BROOME, D. R., PATEL, M. H., A transfer function method of modelling systems with frequency dependent coefficients. *AIAA J. Guidance & Control,* 7, No.4 (1984), 490-4.

JONES, W. J. D. (with Lee, G. M. C.), The fatigue properties of mild steel with surface diffusion coatings of Ni-Fe and Ni-Co-Fe alloys. *Trans. Instn Metal Finishing,* 61 (1983), 50-6.

PATEL, M. H. (with Lynch, E. J.), The coupled dynamics of tensioned buoyant platforms and mooring tethers. *J. Engng Structures,* 5 (1983), 299-308.

PATEL, M. H., SAROHIA, S., Dynamics response of free hanging risers in waves. *Proc. 3rd Offshore Mechanics/Arctic Engng/Deep Seas Symp., AMSE,* 1 (1984), 455-70.

(with Ng, K. F.), Finite element analysis of the marine riser. *J. Engng Structures,* 6, No.3 (1984), 161-70.

TOPP, D. A., DOVER, W. D., Crack shape monitoring using a.c. field measurements. *ASTM Symp. Automated Test Method for Fracture and Fatigue Crack Growth, Pittsburgh, Nov. 1983.*

PHOTOGRAMMETRY AND SURVEYING

ALLAN, A. L., Report on the International Joint Symposium of FIG, IAG, ICA, ISM and ISPRS on Education in Geodesy, Graz, Austria. *Papers, XVII FIG Congr., Sofia* (1983), 201.1, 4 pp.

What mathematics should we teach surveyors. *Ibid.,* 204.1, 8 pp.

An electronic angle encoder for use with a conventional theodolite. *Ibid.,* 503.1, 7 pp.

Crumbs from the rich man's table. *Report of Proc. Conf. Commonwealth Surveyors,* I (1983), Paper A1, 5 pp.

Present developments in high accuracy surveying in engineering and industrial sites. *Survey Review,* 27 (1983), 125-36.

The surveyor and the sportsman. *Land and Minerals Surveying,* 2 (1984), 305-12.

ATKINSON, K. B. (with Gates, J. W. C.), Photogrammetry in science and technology. *Int. Archives Photogrammetry,* 25(5) (1984), 315-24.

BOLT, M. F., ATKINSON, K. B., Space resection of 35mm model aircraft photography. *Int. Archives Photogrammetry,* 25(5) (1984), 90-9.

CROMPTON, T. O., The Pakistan to Russian triangulation connexion: past and projected error analyses. *The International Karakoram Project,* 1, ed. K. J. Miller. Cambridge University Press, 1984, 171-85.

The calculation of crustal displacement and strain from classical survey measurements. *Ibid.,* 2, 140-9.

CROMPTON, T. O., WALTON, J. L. W. (with Bilham, R., Chen Jianming), The survey work of the International Karakoram Project. *The International Karakoram Project,* 2, ed. K. J. Miller. Cambridge University Press, 1984, 124-39.

DOWMAN, I. J., Orientation and construction of models. *Photogrammetric Engineering and Remote Sensing,* 49 (1983), 237-8.

The Spacelab Metric Camera Experiment. *Report Proc. Conf. Commonwealth Surveyors,* I (1983), Paper E5, 4 pp.

Instrumentation for topographic mapping from satellite data. *Int. Archives Photogrammetry,* 25 (2) (1984), 155-63.

Pattern recognition in photogrammetry. *Photogrammetric Record,* 11 (1984), 322-3.

HARLEY, I. A., Photogrammetry. *Report Proc. Conf. Commonwealth Surveyors,* I (1983), Paper A3, 5 pp.

KAPOKAKIS, E. S., Least squares collocation in digital terrain modelling. *Photogrammetric Record,* 11 (1984), 303-9.

SCOTT, P. J. (with Goode, A. W., Wilson, I. A. I., Kirk, C. J. C.), Topical nutrition — a preliminary report. *Proc. 2nd Int. Symp. Advances in Clinical Nutrition* (1983), 339-49.

Sightlines to Pepper's ghost. *The Times Higher Education Suppl.,* 607 (22 June 1984), vii.

SEGU, W. P., An investigation of the scope of high order polynomial digital elevation models. *Int. Archives Photogrammetry,* 25 (3b) (1984), 996-1005.

WICKENS, E. H., Photogrammetry in civil engineering. *The Surveying Technician,* 12 (1984), 4-5.

BARTLETT SCHOOL OF ARCHITECTURE AND PLANNING

ALDHOUS, WENDY, GROÁK, S., MUMTAZ, B., SAFIER, M., *Action Planning and Responsive Design, Festschrift for Professor Otto Koenigsberger.* Oxford: Pergamon, 1983. 394 pp.

BANISTER, D., Questions and answers in attitudinal research design. *New Survey Methods in Transport,* ed. L. Ampt. Sydney: Workshop G, 1983, 1-16.

The sixties revisited — a transport perspective. *Built Environment,* 9 (1983), 282-5.

Central-local government relations in Britain: the case of the Fares Fair policy in London. *Transport Policy and Decision Making,* 2 (1983), 275-89.

(with Botham, R.), Transport and mobility in urban Britain: the Merseyside experience. *La Circolazione nelle Aree Urbane — Criteri Metodi, Risultati.* Milan: Transporti Regione Lombardia, 1983, 75.

CLARKE, LINDA, JANSSEN, J., On a theoretical approach to the study of labour in building and construction. *Proc. Bartlett Int. Summer School 'The Production of the Built Environment' 1982, London* (1983), 0.7-0.38.

DAVIDSON, JOAN, MacEWEN, ANN, *The Livable City,* London, RIBA Publications in association with Kogan Page, 1984. 170 pp.

Towards Sustainable Development — A National Conservation Strategy for Zambia, Gland: International Union for Conservation of Nature and Natural Resources, 1984. 34 pp.

The livable city. *Consumer Affairs,* 64 (1983), 16-21.

The livable city. *Heritage Outlook,* 3 (1983), 101.

Enough theory, more practice. *Town and Country Planning,* 52 (1983), 216-18.

DUNSTER, D., Madrid, Moneo and type: an introduction to the arguments for typology, *UIA/International Architect,* No. 2 (1983), 8-9.

Free-standing columns; a review of some architectural school magazines. *J. Architectural Education* (Spring 1983), 27-32.

EDWARDS, M., Planning and the land market: problems prospects and strategy, *Land Rent, Housing and Urban Planning,* ed. M. Ball et al. London: Croom Helm, 1984, 203-16.

New Towns: reflections on financing and design. *Production of the Built Environment: Proc. Bartlett Int. Summer School 1983,* Université de Genève, 1984, 2.4-2.12.

(with Ball, M., Bentivegna, V., Folin, M.), *Land Rent, Housing and Urban Planning; a European Perspective.* London: Croom Helm, 1984. 226 pp.

FORTY, A., Review of R. Evans, *The Fabrication of Virtue* and T. A. Markus (editor), *Order in Space and Society. Art History,* 6, (1983), 481-4.

GROÁK, S., Building process and technological choice. *Habitat Int.,* 7, Nos. 5/6 (1983), 357-66.

(with Bedford, M.), Current issues in UK architectural education. *Architectural Education,* No 3 (1983), 7-41.

GYFORD, J., *Local Politics in Britan,* 2nd ed. London: Croom Helm, 1984. 171 pp.

On changing local councillors. *New Society* (3 May 1984), 181-3.

(with Hames, M.), *National Parties and Local Politics.* London: Allen and Unwin, 1983, 227 pp.

HARRIS, N., Spatial planning and economic development. *Action Planning and Responsive Design* (Festschrift for Professor Otto Koenigsberger), Oxford: Pergamon, 1983, 67-77.

Metropolitan planning in the developing countries: tasks for the 1980s. *Habitat Int.,* 7 (1983), 5-17.

Some trends in the evolution of big cities: studies of the USA and India. *Ibid.,* 8 (1984), 7-28.

HILLIER, B., HANSON, JULIENNE, *The Social Logic of Space.* Cambridge University Press, 1984. 281 pp.

HILLIER, B., HANSON, JULIENNE, PEPONIS, J., BURDETT, R. (with Hudson, J.), Space syntax: a different urban perspective, *Architects J.,* 178, (1983), 47-63.

JANSSEN, J., General approach — production of the built environment. *The Production of the Built Environment, Proc. Bartlett Int. Summer School 1982,* London (1983), 0.2-0.6.

The formal and real subsumption of capital in the building process. *Ibid.,* 2.2-2.10.

The development of the labour process and capital accumulation in the construction industry. *Ibid.,* 2.25-2.27.

(and others), *Arbeitsbedingungen der Bauerbeiter — Veranderungstendenzen unter dem Einflub bautechnischer Entwicklungen.* Frankfurt/New York: Campus Verlag, 1983. 274 pp.

LEOPOLD, ELLEN, BISHOP, D., Design philosophy and practice in speculative housebuilding. *Construction management and Economics,* Pt 1, vol. 1, No. 2, Autumn 1983, 119-44; Pt 2, vol. 1, No. 3, Winter 1983, 233-68.

LOWE, P. D., Values and institutions in the history of nature conservation. *Conservation in Perspective,* ed. A. Warren and F. B. Goldsmith. Chichester: Wiley, 1983.

Countryside: a voice crying in the wilderness. *New Society,* 67 (Feb. 1984), 301-2.

(with Buller, H.), Are conservationists becoming more political? — The results of an opinion survey. *Ecos,* 4, No.3 (1983), 2-5.

(with Brotherton, I.), Agency or instrument: the role of statutory bodies in rural conservation. *Land Use Policy,* 1 (1984), 147-53.

(with Halling, M.), Agriculture versus conservation: the politics of reform. *South West Papers in Geography,* No.6 (1984), 23-46.

(with Morrison, D.), Bad news or good news: environmental politics and the mass media. *Sociological Rev.,* 32 (1984), 75-90.

MERRETT, S., Villages which have an appetite for land. *Town and Country Planning,* 53 (1984), 140-2.

MERRETT, S., SMITH, R., Returnable empties: the problem of vacant dwellings. *Housing Review,* 33 (1984), 123-6.

NOBLE, J., *Local Standards for the Layout of Residential Roads: a Review.* London: Housing Research Foundation, 1983. 90 pp.

PEPONIS, J., Building organisation and spatial culture. *Synchrona Themata,* No. 91 (1984), 51-60.

(with Kourkoulas, A.), Architectural typology and the social logic of space. *Magazine of the Institute of Greek Architects,* No. 15 (1983), 67-75.

ROWLANDS, E., LOE, D. (with Brickman, N.), Instrumentation for measuring the luminance distribution within the visual field. *Proc. CIBS National Lighting Conf., Cambridge, 1984,* 187-92.

ROWLANDS, E., LOE, D., MANSFIELD, K. (with McIntosh, Rosemary), The effect of light patterns on subjective preference. *Proc. CIE Conf., 20th Session, Amsterdam,* Vol. 1, 1983, E43/1-2.

SMART, A. D. G., The land resource: policy and management. *Land Development Studies,* 1984, 51-9.

Review of D. T. Cross and M. R. Bristow, *English Structure Planning: a Commentary on Procedure and Practice in the Seventies. Town Planning Rev.,* 55, No.3 (1984), 380-1.

SMITH, R. S. G., Housing associations' responses to a new government initiative: the implementation of the 'improvement for scale' programme. *Evaluating Urban Planning Efforts,* ed. I. Masser. Aldershot: Gower, 1983, 70-86.

Advocating home ownership in the American central city. *Occasional Paper,* 42, University of Sheffield, Department of Town and Regional Planning, 1983. 43 pp.
Advocating owner-occupation in the inner city: some lessons from American experience for UK low-cost home ownership programmes. *Planning Outlook,* 26 (1983), 40-3.

SWENARTON, M. C., Venturi at Princeton. *Building Design,* 668 (1983), 14-16.
Morris matters. *Ibid.,* 679 (1984), 16-17.
Philip Webb's classicism. *Ibid.,* 691 (1984), 20-3.
Inaugurating Editor, *Construction History.*

SYMES, M. S., C.P.D. — Attention all practices and schools of architecture. *Architects' J.* (21 and 28 December 1983), 61-2.
Learning from design. *Proc. SERC/DRS Seminar on Building Utilisation, Portsmouth, September 1983,* 10 pp.

SYMES, M. S., MARMOT, ALEXI, Urban development grants: lessons from American experience. *Proc. Planning and Transportation Research and Computation, 11th Ann. Mtg., Brighton, July 1983,* 77-88.
Design for economic development. *Urban design Quart.,* (February 1984), 17.
Grant-aided design, UDG's. British beginnings and American experience. *Architects' J.,* (1983), 49-57.
Introducing the architectural case problem. *Architectural Education,* No. 3 (1983), 99-107.
The architectural case problem. *Working papers presented at the First Seminar on Architectural Case Problem Teaching, University College London* (1983), 52 pp.

TABOR, O. P., Cambridge courts. *Architects' J.* (11 April 1984), 55-65.
Review of L. Wright, *Perspective in Architecture, Architectural Rev.,* clxxiv, (1983), 55-65.

FACULTY OF MEDICAL SCIENCES

ANATOMY AND EMBRYOLOGY

BOYDE, A., Airpolishing effects on enamel dentine and cement. *Br. Dent. J.,* 156 (1984) 287-91.
(with Bab, I., Ashton, B. A., Owen, M. E.), Incident light microscopy of surfaces of plastic embedded hard tissues. *J. Microscopy,* 134 (1984), 49-53.
(with Petran, M., Hadravsky, M.), Tandem scanning reflected light microscopy of internal features in whole bone and tooth samples. *J. Microscopy,* 132 (1983), 1-7.

BOYDE, A., ALI, N. N., JONES, S. J., Resorption of dentine by isolated osteoclasts *in vitro. Br. Dent. J.,* 156 (1984), 216-20.

BOYDE, A., JONES, S. J., Backscattered electron imaging of dental tissues. *Anat. Embryol.,* 168 (1983), 211-26.
Backscattered electron imaging of skeletal tissues. *Metab. Bone Dis. & Rel. Res.,* 5 (1983), 145-50.

BOYDE, A., MACONNACHIE, E., Not quite critical point drying. *Science of Biological Specimen Preparation,* ed. A. M. F. O'Hare. Chicago: SEM Inc, 1984, 71-5.

BOYDE, A., REID, S. A., Cathodoluminescence of glass light microscope slides: a useful signal in SEM of conventional histological material. *J. Anat.,* 137 (1983), 443.
Simple collectors for cathodoluminescence in the SEM made from aluminium foil. *J. Microscopy,* 132 (1983), 239-42.
(with Poole, S., Maroudas, N., Carassi, A.), A new method of image formation using cathodoluminescence in the SEM: CL absorption by superficial stains. *Histochemistry,* 78 (1983), 285-8.

BOYDE, A., REID, S. A., HOWELL, P. G. T., Stereology of bone using both backscattered electron and cathodoluminescence imaging for the SEM. *Beitr. elektronenmikroskop. Direktabb. Oberfl.,* 16 (1983), 419-30.

BOYDE, A., REITH, E. J., Cyclical uptake pattern of tetracycline in post-secretory maturation phase enamel demonstrated in rooted teeth. *Calcif. Tissue Int.,* 35 (1983), 762-6.

BOYDE, A., TAMARIN, A., Improvement to critical point drying technique for SEM. *Scanning,* 6 (1984), 30-5.

BUCKLEY, N., BURNSTOCK G., Autoradiographic localization of peripheral muscarinic receptors. *Subtypes of Muscarinic Receptors,* ed. B. I. Hirschowitz, R. Hammer, A. Giachetti, J. J. Keirns and R. R. Levine. Amsterdam: Elsevier/North Holland, *Trends in Pharmacol. Sci. (Suppl.),* 1984, 55-59.

Autoradiographic localisation of muscarinic receptors in guinea-pig intestine: distribution of high and low affinity agonist binding sites. *Brain Res.,* 294 (1984), 15-22.

Autoradiographic localisation of binding sites for muscarinic and adenosine receptor ligands. *Neurosci. Lett., (Suppl.),* 14 (1983), 546.

BURNSTOCK, G., Recent concepts of chemical communication between ecitable cells. *Dale's Principle and Communication Between Neurones,* ed. N. N. Osborne. Oxford and New York: Pergamon Press, 1983, 7-35.

Non-adrenergic, non-cholinergic transmitters in the enteric nervous system. Lecture in GI motility. *Ital. J. Gastroenterol.,* 15 (1983), 267-73.

BURNSTOCK, G., CROWE, R., KENNEDY, C., TÖRÖK, J., Indirect evidence that purinergic modulation of perivascular adrenergic neurotransmission in the portal vein is a physiological process. *Br. J. Pharmac.,* 82 (1984), 359-68.

BURNSTOCK, G., CUSACK, N. J., HILLS, J. M., MacKENZIE, I., MEGHJI, P., Studies on the stereoselectivity of the P_2-purinoceptor. *Br. J. Pharmac.,* 79 (1983), 907-13.

BURNSTOCK, G., CUSACK, N. J., MELDRUM, L. A., Effects of phosphorothioate analogues of ATP, ADP and AMP on guinea-pig taenia coli and urinary bladder. *Br. J. Pharmac.,* 82 (1984), 369-74.

BURNSTOCK, G., GRIFFITH, S. G., Neurohumoral control of the vasculature. *Biology and Pathology of the Vessel Wall,* ed. N. Woolf. Eastbourne: Praeger, 1983, 15-40.

Innervation of microvascular smooth muscle. *Vasomotion and Quantitative Capillaroscopy,* ed. K. Messmer and F. Hammersen. *Prog. appl. Microcirc.,* 3 (1983), 19-39.

BURNSTOCK, G., HILLS, J. M., HOYLE, C. H. V., Evidence that the P_1-purinoceptor in the guinea-pig taenia coli is an A_2-subtype. *Br. J. Pharmac.,* 81 (1984), 533-41.

BURNSTOCK, G., SAFFREY, M. H. (and others), Increase in SP-like immunoreactivity in nerve fibres of rabbit iris and ciliary body one to four months following sympathetic denervation. *Exp. Eye Res.,* 37 (1983), 191-7.

BURNSTOCK, G., SNEDDON, P., Evidence that excitatory junction potentials in response to sympathetic nerve stimulation of some smooth muscles are mediated by ATP. *J. Physiol. (Lond.),* Editors, 351 (1984), 28P.

BURNSTOCK, G., VRBOVÁ, G., O'BRIEN, R., Editors, *Somatic and Autonomic Nerve-Muscle interactions.* Amsterdam: Elsevier/North-Holland, 1983. 360 pp.

CHRISTIE, D., STEELE RUSSELL, I., Frontal eye field lesions, visual neglect and oculomotor strategies in the rat. *Behav. Brain Res.,* 12 (1984), 180.

CROWE, R., BURNSTOCK, G., Quinacrine-positive neurones in some regions of the guinea-pig brain. *Brain Res.Bull.,* 12 (1984), 387-91.

CROWE, R., LINCOLN, J., BLACKLAY, P. F., PRYOR, J. P., LUMLEY, J. S. P., BURNSTOCK, G., Vasoactive intestinal polypeptide-like immunoreactive nerves in

diabetic penis. A comparison between streptozotocin-treated rats and man. *Diabetes,* 32 (1983), 1075-7.

DE VOS-KORTHALS, W. H., VAN HOF, M. W., Interocular transfer in the rabbit tested without uninterrupted series of monocular trials. *Behav. Brain Res.,* 9 (1983), 105-10.

GLICKSTEIN, M., HARDIMAN, M. H., YEO, C. J., The effects of cerebellar lesions on the conditioned nictitating membrane response of the rabbit. *J. Physiol. (Lond),* 341 (1983), 30-31.

Lesions of cerebellar lobulus simplex abolish the classically conditioned nictitating membrane response of the rabbit. *Ibid.,* 350 (1984), 31.

GLICKSTEIN, M., MERCIER, B., Cortical efferents in the macaque: the density of pontine projections from subdivisions of the cerebral cortex. *Neurosci. Abs.,* 9 (1983), 309.

GLICKSTEIN, M., MERCIER, B., WHITTERIDGE, D., The striate cortex input to the macaque pons: selectivity and demagnification. *J. Physiol. (Lond),* 341 (1984), 77P.

GREENBERG, G., BURNSTOCK, G., A novel cell-to-cell interaction between mast cells and other cell types. *Exptl. Cell Res.,* 147 (1983), 1-13.

GRIFFITH, S. G., BURNSTOCK, G., Serotoninergic neurons in human fetal intestine: an immunohistochemical study. *Gastroenterology,* 85 (1983), 929-37.

HANANI, M., BURNSTOCK, G., Substance P evokes slow and fast responses in cultured myenteric neurons of the guinea-pig. *Neurosci. Lett.,* 48 (1984), 19-23.

HARDIMAN, M. J., YEO, C. H., The effects of cerebellar nuclei lesions on the conditioned nictitating membrane response of the rabbit. *Behav. Brain Res.,* 12 (1984), 197-8.

HILLS, J. M., MELDRUM, L. A., KLARSKOV, P., BURNSTOCK, G., A novel non-adrenergic, non-cholinergic nerve-mediated relaxation of the pig bladder neck: an examination of possible neurotransmitter candidates. *Eur. J. Pharmac.,* 99 (1984), 287-93.

HODDE, K. C., BOYDE, A., REID, S. A., REITH, E. J., SCHMID, M. J., The vascular architecture of the rat incisor enamel organ. *Beitr. elektronenmikroskop. Direktabb. Oberfl.,* 16 (1983), 431-42.

HOWELL, P. G. T., Assessment of a bur designed for the removal of metal restorations. *Br. Dent. J.,* 156 (1984), 58-60.

JONES, S. J., BOYDE, A., Ultrastructure of dentin and dentinogenesis. *Dentin and dentinogenesis,* vol.1, ed. A. Linde. Florida: CRC Press, 1984, 81-134.

KENNEDY, C., BURNSTOCK, G., Evidence for an inhibitory prejunctional P_1-purinoceptor in the rat portal vein with characteristics of the A_2 rather than the A_1 subtype. *Eur. J. Pharmac.,* 100 (1984), 363-8.

LEGAY, C., SAFFREY, M. J., BURNSTOCK, G., Coexistence of immunoreactive substance P and serotonin in neurones of the gut. *Brain Res.,* 302 (1984), 379-82.

LINCOLN, J., BOKOR, J. T., CROWE, R., GRIFFITH, S. G., HAVEN, A. J., BURNSTOCK, G., Myenteric plexus in streptozotocin-treated rats. *Gastroenterology,* 86 (1984), 654-61.

LINCOLN, J., CROCKETT, M., HAVEN, A. J., BURNSTOCK, G., Rat bladder in the early stages of streptozotocin-induced diabetes: adrenergic and cholinergic innervation. *Diabetologia,* 26 (1984), 81-7.

LINCOLN, J., HAVEN, A. J., SAWYER, M., BURNSTOCK, G., The smooth muscle of rat bladder in the early stages of streptozotocin-induced diabetes. *Br. J. Urol.,* 56 (1984), 24-30.

MEGHJI, P., BURNSTOCK, G., Absence of purinoceptors in the heart of the turtle *(Emys orbicularis). Comp. Biochem. Physiol.,* 76C (1983), 255-7.

Actions of some autonomic agents on the heart of the trout (Salmo Gairdneri) with emphasis on the effects of adenyl compounds. *Comp. Biochem. Physiol.,* 78C (1984), 69-75.
The effects of adenyl compounds on the heart of the axolotl *(Ambystoma mexicanum). Comp. Biochem. Physiol.,* 76C (1983), 319-26.
The effect of adenyl compounds on the heart of the dogfish *(Scyliohinus canicula). Comp. Biochem. Physiol.,* 77C (1984), 295-300.

MELDRUM, L. A., BURNSTOCK, G., Evidence that ATP acts as a co-transmitter with noradrenaline in sympathetic nerves supplying the guinea-pig vas deferens. *Eur. J. Pharmac.,* 92 (1983), 161-3.

MOODY, C. J., MEGHJI, P., BURNSTOCK, G., Stimulation of P_1-purinoceptors by ATP depends partly on its conversion to AMP and adenosine and partly on direct action. *Eur. J. Pharmac.,* 97 (1984), 47-54.

QUILLIAM, T. A., Problems and opportunities in structural studies of tactile skin receptors. *Neuromuscular Diseases,* ed. G. Serratrice et al. New York: Raven Press, 1984, 309-18.

ROBINSON, F. R., COHEN, J. L., MAY, J., SESTOKAS, A. K., GLICKSTEIN, M., Cerebellar targets of visual pontine cells in the cat. *J. Comp. Neurol.,* 223 (1984), 471-82.

SABA, H., COWEN, T., HAVEN, A. J., BURNSTOCK, G., Reduction of noradrenergic perivascular nerve densities in the left and right cerebral arteries of old rabbits. *J. Cerebral Blood Flow Metab.,* 4 (1984), 284-9.

SAFFREY, M. J., LEGAY, C., BURNSTOCK, G., Development of 5-hydroxytryptamine-like immunoreactive neurones in cultures of the myenteric plexus from the guinea-pig caecum. *Brain Res.,* 304 (1984), 105-16.

SAFFREY, M. J., MARCUS, N., JESSEN, K. R., BURNSTOCK, G., Distribution of neurons with high-affinity GABA uptake sites in the myenteric plexus of the guinea-pig, rat and chicken. *Cell Tiss. Res.,* 234 (1983), 231-5.

SMITH, M. M., BOYDE, A., REID, S. A., Cathodoluminescence as an indicator of growth increments in the dentine in tooth plates of Triassic lungfish. *N. Jb. Geol. Paläont. Mh.,* 1 (1984), 39-45.

SNEDDON, P., BURNSTOCK, G., Inhibition of excitatory junction potentials in guinea-pig vas deferens by α, βmethylene-ATP: further evidence for ATP and noradrenaline as cotransmitters. *Eur. J. Pharmac.,* 100 (1984), 85-90.

STEELE RUSSELL, I., VAN HOF, M. W., PEREIRA, S. C., JAMES, G., The role of the uncrossed optic fibres in rabbit vision. *Behav. Brain Res.,* 12 (1984), 232-3.

VAN HOF, M. W., RUSSELL, I. S., HOBBELEN, J. F., PEREIRA, S., Vision after removal of the pia mater and dura mater of the occipital lobe in the rabbit. *Arch. Intern. Physiol. Biochim.,* 91 (1983), P18.

VAN HOF, M. W., STUURMAN, P. M., Visual discrimination after early and late unilateral enucleation of the rabbit. *Behav. Brain Res.,* 12 (1984), 87-9.

VAN HOF, M. W., VAN HOF-VAN DUIN, J., The contribution of the rewarded and unrewarded stimulus in two-choice pattern discrimination in the rabbit. *Behav. Brain Res.,* 11 (1984), 135-43.
How does a rabbit decide in two-choice pattern discrimination? *Behav. Brain Res.,* 12 (1984), 238-9.

VAN HOF, M. W., VAN HOF-VAN DUIN, J., HOBBELEN, J. F., Visual discrimination after bilateral removal of the visual cortex in the rabbit. *Behav. Brain Res.,* 9 (1983), 257-62.

WILDERVANCK DE BLECOURT, E. M. W., VAN HOF, M. W., Orientation discrimination in the rat. *Behav. Brain Res.,* 12 (1984), 250-1.

YEO, C. H., HARDIMAN, M. J., Lesions of cerebellar cortex abolish conditioning of the rabbit's nictitating membrane response. Abstract. *Behav. Brain Res.,* 12 (1984), 251-2.

YEO, C. H., HARDIMAN, M. J., MOORE, J. W., STEELE RUSSELL, I., Retention of conditioned inhibition of the nictitatin membrane response in decorticate rabbits. *Behav. Brain Res.,* 10 (1983), 383-92.

Trace conditioning of the nictitating membrane response in decorticate rabbits. *Behav. Brain Res.,* 11 (1984), 85-8.

BIOCHEMISTRY

ADAMS, A., FEY, E. G., PIKE, S. F., TAYLORSON, C. J., WHITE, H. A., RABIN, B. R., Preparation and properties of a complex from rat liver of polyribosomes with components of the cytoskeleton. *Biochem. J.,* 216 (1983), 215-26.

ASHWORTH, A., SHEPHARD, E. A., RABIN, B. R., PHILLIPS, I., Microheterogeneity in a cytochrome P-450 multigene family. *Biochem. Soc. Trans.,* 12 (1984), 667-8.

CHANCE, E. M. (with Seeholzer, S. H., Kobayashi, K., Williamson, J. R.), Mathematical analysis of isotope labelling in the citric acid cycle with applications to 13^{C}NMR studies in perfused rat hearts. *J. Biol. Chem.,* 258 (1983), 13785-94.

(and others), NMR kinetic study of ^{13}C incorporation into intermediates of rat hearts perfused with [3-^{13}C] pyruvate and [2-^{13}C] acetate. *Fed. Proc.,* 42 (1984), 2142.

CLARKE, P. H., The evolution of degradative pathways. *Microbial Degradation of Organic Compounds,* ed. D. T. Gibson. New York: Marcel Dekker, 1984, 11-27.

Evolution of new phenotypes. *Current Perspectives in Microbial Ecology,* ed. M. J. Klug and C. A. Reddy. Washington. D.C.: American Society for Microbiology, 1984, 71-8.

CORRIGALL, J., TSELENTIS, B. S., MOWBRAY, J., The efficiency of oxidative phosphorylation and the rapid control by thyroid hormone of nicotinamide nucleotide reduction and transhydrogenation in intact rat liver mitochondria. *Eur. J. Biochem.,* 141 (1984), 435-40.

CROMPTON, M., KESSAR, P., The sequestration of Ca^{2+} by mitochondria in rat heart cells. *Cell Calcium,* 4 (1983), 295-305.

CROMPTON, M., KESSAR, P., AL-NASSER, I., The α-adrenergic-mediated activation of the cardiac mitochondrial Ca^{2+} in vivo. *Biochem. J.,* 216 (1983), 333-42.

GREGORY, S. P., BUTTERWORTH, P. H. W., A comparison of the promoter strengths of two eukaryotic genes in vitro reveals a region of DNA that can influence the rate of transcription in cis over long distances. *Nucleic Acids Res.,* 11 (1983), 16.

MEADOW, P. M., ROWE, P. S. N., WELLS, P. L., Characterization of polyagglutinating and surface antigens in *Pseudomonas aeruginosa. J. Gen. Microbiol.,* 120 (1984), 631-44.

MOWBRAY, J., CORRIGALL, J., Short-term control of mitochondrial adenine nucleotide translocator by thyroid hormone. *Eur. J. Biochem.,* 139 (1984), 95-9.

PHILLIPS, I. R., SHEPHARD, E. A. (with Stein, J. L., Stein, G. S.), Approaches to studying age-dependent changes in chromosomal proteins. *Altered Protein and Aging, CRC Series in Aging,* ed. R. C. Adelman and G. S. Roth. Boca Raton, Florida: CRC Press, 1983, 81-112.

(with Shiels, A., Jeffrey, S., Wilson, C. A., Carter, N. D.), Sexual differentiation of rat liver carbonic anhydrase, III. *Biochim. Biophys. Acta,* 760 (1983), 335-42.

PHILLIPS, I. R., SHEPHARD, E. A., ASHWORTH, A., Cloning of a cDNA coding for a rat liver protein whose expression is subject to gender-specific regulation by xenobiotics. *Biochem. Soc. Trans.,* 12 (1984), 103-4.

PHILLIPS, I. R., SHEPHARD, E. A., ASHWORTH, A., RABIN, B. R., Cloning and sequence analysis of a rat liver cDNA coding for a phenobarbital-inducible microheterogenous cytochrome P-450 variant: regulation of its messenger level by xenobiotics. *Gene,* 24 (1983), 41-52.

PHILLIPS, I. R., SHEPHARD, E. A., RABIN, B. R., ASHWORTH, A., BAYNEY, R. N., PIKE, S. F., Structure and expression of gene coding for phenobarbital-inducible cytochrome P-450. *9th Europ. Workshop Drug Metabolism, Pont-a-Mousson, France* (1984), 263-263.

PHILLIPS, I. R., SHEPHARD, E. A., RABIN, B. R., BAYNEY, R. M., PIKE, S. F., ASHWORTH, A., ESTALL, M. R., Factors controlling the expression of gene coding for drug metabolising enzymes. *Biochem. Soc. Trans.,* 11 (1982), 460-3.

PIPER, P. W., LOCKHEART, A., PATEL, N., A minor class of 5S rRNA genes in Saccharomyces cerevisiae X2180-1 B, one number of which lies adjacent to a Ty transposable element. *Nucleic Acids Res.,* 12 (1984), 4083-96.

PIPER, P. W., PATEL, N., LOCKHEART, A., Processing of the 3′ sequence extensions upon the 5S rRNA of a mutant yeast in *Xenopus laevis* germinal vesicle extract. *Eur. J. Biochem.,* 141 (1984), 115-18.

ROSEMEYER, M. A. (with Franklin, I. M., Huehns, E. R.), Sickle cell disease: the proportion of liganded haemoglobin needed to prevent crises. *Brit. J. Haematol.,* 54 (1983), 579-87.

SAMBANTHAMURTHI, R., LAVERACK, P. D., CLARKE, P. H., Lysine excretion by a mutant strain of *Pseudomonas aeruginosa. FEMS Microbiol. Lett.,* 23 (1984), 11-15.

WILLIAMS, D. J. (with Groeger, B. K., Franz, H., O'Dell, D. S.), Tissue specific binding of Ricin 120 and Mistletoe I lectins. *Euro. J. Cell. Biol.,* 33, supp. 4 (1984), 9.

WILLIAMS, D. J. (and others), Affinities of Ricin 120 and Mistletoe lectin I for membrane components of liver and nervous tissue. *Lectins,* 3 (1983), 179-87.

BIOPHYSICS

CARATSCH, C. G., MILEDI, R., STRONG, P. N., β-Bungarotoxin binding at the neuromuscular junction: divalent ion requirement. *Proc. 5th Europ. Symp. Animal, Plant and Microbial Toxins, Hanover* (1983) 58.

EUSEBI, F., MILEDI, R., Divalent cations and temperature dependent block of impulse propagation at the frog neuromuscular junction. *Muscle & Nerve,* 6 (1983), 602-5.

EUSEBI, F., MILEDI, R., TAKAHASHI, T., Aequorin-calcium transients in frog twitch muscle fibres. *J. Physiol.,* 340 (1983), 91-106.

GLAVINOVIĆ, M. I., MILEDI, R., NAKAJIMA, Y., Morphological and physiological changes in dissociated adult frog muscle fibres after prolonged culturing. *Proc. R. Soc. Lond.,* B, 219 (1983), 91-101.

GUNDERSEN, C. B., MILEDI, R., Acetylcholinesterase activity of *Xenopus laevis* oocytes. *Neuroscience,* 10 (1983), 1487-95.

GUNDERSEN, C. B., MILEDI, R., PARKER, I., Serotonin receptors induced by exogenous messenger RNA in *Xenopus* oocytes. *Proc. R. Soc. Lond.,* B, 219 (1983), 103-9.

Voltage-operated channels induced by foreign messenger RNA in *Xenopus* oocytes. *Ibid.,* (1983), 131-40.

Glutamate and kainate receptors induced by rat brain messenger RNA in *Xenopus* oocytes. *Ibid.,* 221 (1984), 127-43.

Properties of human brain glycine receptors expressed in *Xenopus* oocytes. *Ibid.,* 221 (1984), 235-44.

Messenger RNA from human brain induced drugs- and voltage-operated channels in *Xenopus* oocytes. *Nature,* 308 (1984), 421-4.

LIMBRICK, A. R. (with Allan, D., Taylor, J. A., Judah, J. D.), Isolation of highly purified Golgi membranes from rat liver. Use of cycloheximide in vivo to remove Golgi contents. *Biochim. biophys. Acta,* 769 (1984), 171-8.

(with Allan, D., Thomas, P.), Limited breakdown of cytoskeletal proteins by an endogenous protease controls Ca^{2+}-induced membrane fusion events in chicken erythrocytes. *Biochim. biophys. Acta,* 730 (1983), 351-8.

MILEDI, R., MOLENAAR, P. C., POLAK, R. L., Acetylcholinesterase activity in intact and homogenized skeletal muscle of the frog. *J. Physiol.,* 349 (1984), 663-86.

MILEDI, R., PARKER, I., SUMIKAWA, K., Recording of single γ-aminobutyrate- and acetylcholine-activated receptor channels translated by exogenous mRNA in *Xenopus* oocytes. *Proc. R. Soc. Lond.,* B, 218 (1983), 481-4.

MILEDI, R., PARKER, I., ZHU, P.-H., Temperature dependence of calcium transients in frog twitch muscle fibres. *J. Physiol.,* 341 (1983), 40P.

Changes in threshold for calcium transients in frog skeletal muscle fibres due to calcium depletion in the T-tubules. *Ibid.,* 344 (1983), 233-41.

Extracellular ions and excitation-contraction coupling in frog twitch muscle fibres. *Ibid.,* 351 (1984), 687-701.

MILEDI, R., REISER, G., Time-course of miniature endplate currents evoked by acetylcholine quanta released from frog Schwann-cells. *J. Physiol.,* 343 (1983), 27-8P. Miniature end-plate currents in two different types of fish muscle fibres. *Ibid.,* 346 (1983), 80P.

MILEDI, R., REISER, G., UCHITEL, O. D., Characteristics of membrane channels induced by acetylcholine at frog muscle-tendon junctions. *J. Physiol.,* 350 (1984), 269-77.

MILEDI, R., UCHITEL, O. D., A study of submaxillaris muscle of the frog. *J. Physiol.,* 350 (1984), 279-91.

PARKER, I. (with Csternasty, G., Thieffry, M.), Calcium transients in a crustacean motoneurone soma: detection with arsenazo III. *Experientia,* 40 (1984), 106-8.

PARKER, I., ZHU, P.-H., Effects of lidocaine on calcium transients in frog twitch muscle fibres. *J. Physiol.,* 345 (1983), 78P.

GENETICS AND BIOMETRY

BALL, S., CORNEY, G., MONTEIRO, M., NOADES, J., ROBSON, E. B. (with Buckton, K. E., Fey, G., Tippett, P.), Mapping studies with peptidase D. *Cytogenet. Cell Genet.,* 37 (1984), 411-12.

BARTON, N. H., JONES, J. S., Mitochondrial DNA: new clues about evolution. *Nature,* 306 (1983), 317-18.

COOK, P. J. L., CARLILE, P. A. (and others), Outcome of liver disease associated with α_1 antitrypsin deficiency (PiZ). Implications for genetic counselling and antenatal diagnosis. *Arch. Dis. Child.,* 58 (1983), 882-7.

CORNEY, G., Sir Francis Galton, 1822-1911. *Acta Genet. Med. Gemellol.,* 33 (1984), 13-18.

(with Burn, J.), Congenital heart defects and twinning. *Acta Genet. Med. Gemellol.,* 33 (1984), 61-9.

DEOL, M. S., Development of auditory and vestibular systems in mutant mice. *Development of Auditory and Vestibular Systems,* ed. R. Romand, New York, London: Academic Press, 1983, 309-33.

(with Pujol, R., Shnerson, A., Lenoir, M.), Early degeneration of sensory and ganglion cells in the inner ear of mice with uncomplicated genetic deafness (*dn*). *Hearing Research,* 12 (1983), 5764.

DEOL, M. S., TRUSLOVE, G. M., The effects of the pink-eyed unstable gene on the retinal pigment epithelium of the mouse. *J. Embryol. exp. Morph.,* 78 (1983), 291-8.

EDWARDS, Y. H. (with Shaw, M.-A.), The isozymes of membrane-associated enzymes: Acetylcholinesterase, succinate dehydrogenase and glycerol-3-phosphate dehydrogenase. *Isozymes; Current Topics in Biological and Medical Research,* vol. 10, ed. M. C. Rattazi, J. Scandalios and G. S. Whitt. New York: Alan R. Liss, 1983, 125-46.

EDWARDS, Y. H., JEREMIAH, S. J., McMILLAN, S. L., POVEY, S., Complete hydatidiform moles combine maternal mitochondria with a paternal nuclear genome. *Ann. Hum. Genet.,* 48 (1984), 119-27.

HOPKINSON, D. A. (with Adinolfi, A., Adinolfi, M.), Immunological and biochemical characterization of the human alcohol dehydrogenase χ-ADH isozyme. *Ann. Hum. Genet.,* 48 (1984), 1-10.

(and others), Erythrocyte glutathione S-transferase. Electrophoretic identification of two enzyme forms. *Biochem. J.,* 215 (1983), 213-16.

(and others), The human glutathione S-transferases: studies on the tissue distribution and genetic variation of the GST1, GST2 and GST3 isozymes. *Ann. Hum. Genet.,* 48 (1984), 11-20.

(and others), The human glutathione S-transferases: studies on the distribution of the GST1, GST2 and GST3 isoenzymes. *Biochem. Soc. Transac.,* 12 (1984), 285-6.

HOPKINSON, D. A., SWALLOW, D. M., TURNER, V. S., AZIZ, I., Evidence for a distinct deoxypyrimidine 5′-nucleotidase in human tissues. *Purine Metabolism in Man,* vol. IV. *Clinical and Therapeutic Aspects; Regulatory Mechanisms,* ed. C. H. M. M. De Bruyn, H. A. Simmonds and M. M. Müller. New York/London: Plenum Press, *Advances in Experimental Medicine and Biology* 165A (1984), 535-41.

HUNT, S., MITTWOCH, M., Effects of gossypol on sperm counts in two inbred strains of mice. *J. Reprod. Fert.,* 70 (1984), 341-5.

JONES, J. S., How is genetic change related to speciation? *Heredity,* 50 (1983), 212.

(with Ochman, H., Selander, R. K.), Molecular area effects in *Cepaea. Proc. Natl. Acad. Sci. USA,* 80 (1983), 4189-93.

(with Partridge, L.), Tissue rejection: the price of sexual acceptance? *Nature* (1983), 484-5.

KALMUS, H., Kind and intensity of selection at the colour vision loci. *Colour Vision,* ed. J. D. Mollon and L. T. Sharpe. London: Academic Press, 1983, 51-5.

KARLSSON, S., SWALLOW, D. M., GRIFFITHS, B., CORNEY, G., HOPKINSON, D. A. (with Dawnay, A., Cartron, J. P.), A genetic polymorphism of a human urinary mucin. *Ann. Hum. Genet.,* 47 (1983), 263-9.

KING, J., ROBSON, E. B. (with Sherman, S., Yee, S.), A revised map of chromosome 1. *Ann. Hum. Genet.,* 48 (1984), 243-51.

MAHADEVAIAH, S., MITTWOCH, U. (with Moses, M. J.), Pachytene chromosomes in male and female mice heterozygous for the Is(7;1)40H insertion. *Chromosoma* 90 (1984), 163-9.

MITTWOCH, U., Heteropycnosis and the activity of X chromosomes: history and prospects. *Cytogenetics of the Mammalian X Chromosome,* Pt A *Basic Mechanisms of X Chromosome Behavior,* ed. A. A. Sandberg. New York: Alan R. Liss, 1983, 251-70.

PARKAR, M., JEREMIAH, S. J., POVEY, S. (and others), Confirmation of the assignment of human biliverdin reductase to chromosome 7. *Ann. Hum. Genet.,* 48 (1984), 57-60.

PARRINGTON, J. M., WEST, L. F., POVEY, S., The origin of ovarian teratomas. *J. Med. Genet.,* 21 (1984), 4-12.

POVEY, S. (with Sheppard, D. M., Fisher, R. A., Lawler, S. D.), Tetraploid conceptus with three paternal contributions. *Hum. Genet.,* 62 (1982), 371-4.

ROBSON, E. B., X-chromosome in human gene mapping. *X-linked Disorders,* ed. C. San Roman and A. McDermott. *Monographs in Human Genetics,* 11 (1983), 16-32.

(with Lamm, L.), The genetical constitution of chromosome 6. *Cytogenet. Cell Genet.,* 37 (1984), 47-70.

ROBSON, E. B., SMITH, C. A. B., Editors, *Annals of Human Genetics.* Cambridge University Press.

SMITH, C. A. B., Francis Galton. Statistics in Human Genetics. Kotz-Johnson: *Encyclopedia of Statistical Sciences,* vol. 3. Wiley, 1983, 679-83.

SPURR, N. K., CARRITT, B. (and others), Chromosomal localisation of human cellular homologues of two viral oncogenes. *Nature,* 299 (1982), 747-9.

SWALLOW, D. M., DELHANTY, J. D. A. (with Davis, M. B.), Isozyme analysis of the large intestine with special reference to carcinoma of the colon and familial polyposis coli. *Disease Markers,* 1 (1983), 283-97.

SWALLOW, D. M., POVEY, S. (and others), Genetic analysis of the 15;17 chromosome translocation associated with acute promyelocytic leukaemia. *Proc. Natl. Acad. Sci. USA,* 80 (1983), 5007-11.

(and others), Genetic mapping of the 15;17 chromosome translocation associated with acute promyelocytic leukaemia. *Chromosomes and Cancer* (Bristol-Myers Cancer Symposia Vol. 5), ed. J. D. Rowley, J. E. Ultman and M. Gordon. New York: Academic Press, 1983, 183-93. (ch.10.)

TUNNACLIFFE, A., PARKAR, M. (and others), The gene MIC4, which controls expression of the antigen defined by monoclonal antibody F10.44.2 is on human chromosome 11. *Eur. J. Immunol.,* 12 (1982), 659-63.

WHITEHOUSE, D. B., Genetic polymorphism and linkage of the sixth and seventh complement components (C6 and C7) in the common marmoset. *Biochem. Genet.,* 22 (1984), 51-63.

(with Crawford, M. A., Hare, W. R.), Nutrient partitioning in domestic and non-domesticated animals. *Fats in Animal Nutrition,* ed. Julian Wiseman. Sevenoaks: Butterworths, 1984, 471-9.

PHARMACOLOGY

ADAMS, D. J., Chemical modification of endplate channels in frog skeletal muscle. *J. Physiol.,* 343 (1983), 29-30P.

(with Bevan, S. J.), Acetylcholine receptors in cultured human myotubes: distribution and single-channel properties. *J. Physiol.,* 341 (1983), 25-6P.

(with Bevan, S. J., Terrar, D. A.), Kinetics of hexamethonium action on ACh receptor-channels in frog skeletal muscle. *Br. J. Pharmac.,* 80 (1983), 457P.

(with Oxford, G. S., Forscher, P.), Intracellular NH^{+4} and H^{+} ions antagonize block of sodium channels by saxitoxin and tetrodotoxin. *Biophys. J.,* 45 (1984), 13a.

(with Takeda, K., Umbach, J. A.), Metabolic inhibitors and lithium depress synaptic transmission at the squid giant synapse. *J. Physiol.,* 345 (1983), 147P.

ADAMS, D. J., COLQUHOUN, D., Current relaxations with high agonist concentrations. Do acetylcholine and suberyldicholine block ion channells in frog muscle? *J. Physiol.,* 341 (1983), 22-3P.

ALLEN, M. C., The effect of choline mustard on the rat superior cervical ganglia. *Br. J. Pharmac.,* 79 (1983), 147P.

ASSEM, E. S. K., Hypersensitivity reactions to general and local anaesthetics. *Allergic Reaction to Drugs. Handbook of Experimental Pharmacology,* vol.63, ed. A. de Weck, H. Bundgaard and K. Schulz. Berlin; Heidelberg: Springer-Verlag, 1983, 259-75.

Reaction to neuromuscular blocking drugs. *Ibid.,* 299-312.

Allergic responses during anaesthesia: methods of detection. *Anaesthesia Review,* vol.2, ed. L. Kaufman. Edinburgh/London: Churchill Livingstone, 1984, 49-62. (ch.5.)

Levamisole: an immunopotentiator. *Textbook of Immunopharmacology,* ed. M. M. Dale and J. C. Foreman. Oxford: Blackwell, 1984, 333-9.

Characteristics of basophil histamine release by neuromuscular blocking drugs in patients with anaphylactoid reactions. *Agents and Actions,* 14 (1984), 435-40.

Diagnostic and predictive test procedures in patients with life-threatening anaphylactic and anaphylactoid drug reactions. *Allergologia et Immunopathologia (Madrid),* 12 (1984), 61-70.

ASSEM, E. S. K., BRAY, K. (with Dawson, P.), The release of histamine from human basophils by radiological contrast agents. *J. Radiology,* 56 (1983), 647-52.

BAILEY, S. J., JORDAN, C. C., Loss of activity of tachykinins in smooth muscle: relevance to potency estimates *in vitro. Br. J. Parmac.,* 81 (1984), 61P.

A study of [D-Pro^2,D-Phe^7,D-Trp^9]-substance P and [D-Trp^{7,9}]-substance P as tachykinin partial agonist in the rat colon. *Ibid.,* 82 (1984), 441-51.

COLQUHOUN, D. (with Hawkes, A. G.), The principles of the stochastic interpretation of ion-channel mechanisms. *Single Channel Recording,* ed. B. Sakmann and E. Neher. New York: Plenum Press, 1983, 135-75.

(with Sakmann, B.), Bursts of openings in transmitter-activated ion channels. *Ibid.,* 345-64.

(with Sigworth, F. J.), Fitting and statistical analysis of single-channel records. *Ibid.,* 191-263.

COLQUHOUN, D., GARDNER, P., OGDEN, D. C., The conductance of ion channels opened by different cholinomimetic agonists in cultured rat muscle. *J. Physiol.,* 345 (1983), 139P.

COOK, N. S., HAYLETT, D. G., Effects of tubocurarine and other neuro-muscular blocking agents on Ca-activated K-channels in guinea-pig liver cells. *Br. J. Pharmac.,* 80 (1983), 546P.

CULL-CANDY, S. G., New ways of looking at synaptic channels: noise analysis and patch-clamp recording. *Recent Advances in Physiology,* vol.10, ed. P. F. Baker. Edinburgh/London: Churchill Livingstone, 1984, 1-28.

Glutamate and GABA-receptor channels at the locust nerve-muscle junction: noise analysis and single channel recording. *Cold Spring Harbor Symp.,* 48 (1983), 269-78.

Miniature inhibitory junctional currents in voltage-clamped locust muscle fibres. *J. Physiol.,* 242 (1983), 66-7P.

Inhibitory synaptic currents in voltage-clamped locust muscle fibres desensitized to their excitatory transmitter. *Proc. R. Soc. Lond.,* B, 221 (1984), 375-83.

(with Parker, I.), Experimental approaches used to examine single glutamate-receptor ion channels in locust muscle fibres. *Single Channel Recording,* ed. B. Sakmann and E. Neher. New York: Plenum Press, 1983, 389-400.

DALE, M. M., FOREMAN, J. C., Editors, *Textbook of Immunopharmacology.* Oxford: Blackwells, 1984. (chs.1, 3, 8, 19 and 22.)

DICKENSON, A. H., The inhibitory effects of thalamic stimulation on the spinal

DICKENSON, A. H., The inhibitory effects of thalamic stimulation on the spinal transmission of nociceptive information in the rat. *Pain,* 17 (1983), 213-24.
(with Goldsmith, G. E.), Involvement of serotonin in the responses of neurones in rat raphe magnus to noxious peripheral stimuli. *J. Physiol.,* 350 (1984), 23P.
(with Le Bars, D., Villeneuva, L., Besson, J. M.), Aspects of sensory processing through convergent neurones. *Functional Organization of Spinal Afferent Processing,* ed. T. L. Yaksh. New York: Humana Press, 1984. (ch.22.)

EZEAMUZIE, I. C., ASSEM, E. S. K., Modulation of the effect of histamine-releasing lymphokine on human basophils. *Agents and Actions,* 14 (1984), 501-5.

FOREMAN, J. C., Supplementary benefit? *Current Practice,* 6 (1983), 30.
Vitamin E — who needs it? *Ibid.,* 56 (1984), 16.
(with Arvilommi, H., Poikonen, K., Jokinen, I., Muukkonen, O., Raianen, L., Huttunen, J. K.), Selenium and immune functions in man. *Infect. Immun.,* 41 (1983), 185-9.
(with Bekkemeyer, H., Oehme, P.), Accidental injection of substance P. *J. Roy. Soc. Med.,* 76 (1983), 801-2.

FOREMAN, J. C., JORDAN, C. C., Neurogenic inflammation. *Trends in Pharmac. Sci.,* 5 (1984), 116-19.

GARDNER, P., OGDEN, D. C., COLQUHOUN, D., Conductances of single ion channels opened by nicotinic agonists are indistinguishable. *Nature,* 309 (1984), 160-2.

GRAY, P. T. A., MAGNUS, C. J., The culture of rat submandibular ganglion neurons and their macroscopic responses to acetylcholine. *Proc. R. Soc. Lond.,* B, 220 (1983), 265-71.

GRAY, P. T. A., RANG, H. P., Analysis of current noise evoked by nicotinic agonists in rat submandibular ganglion neurones. *Br. J. Pharmac.,* 80 (1983), 235-40.
(with Attwell, D.), Patch-clamp recording from isolated rods of the salamander retina. *J. Physiol.,* 351 (1984), 9P.
(with Bevan, S., Ritchie, J. M.), Calcium-activated ion channels in rat Schwann cells. *J. Physiol.,* 348 (1984), 17P.
(with Bevan, S., Ritchie, J. M.), A high conductance anion-selective channel in rat Schwann cells. *J. Physiol.,* 348 (1984), 18P.
(with Mill, P. J.), The mechanics of the predatory strike of the praying mantid *Heirodula Membranacea. J. exp. Biol.,* 107 (1983), 245-75.

GURNEY, A. M., RANG, H. P., The channel-blocking action of methonium compounds on rat submandibular ganglion cells. *Br. J. Pharmac.,* 82 (1984), 623-42.

HEALICON, R. M., FOREMAN, J. C., Receptors for immunoglobulin E (IgE). *The Receptors,* vol.1, ed. P. M. Conn. New York: Academic Press, 1984, 83-140.
Characteristics of histamine release from isolated rat mast cells: differences when various ligands are used to induce secretion. *Agents & Actions,* 14 (1984), 365-9.

JENKINSON, D. H., HAYLETT, D. G., COOK, N. S., Calcium-activated potassium channels in liver cells. *Cell Calcium,* 4 (1983), 429-37.

KENT, A. P., WEBSTER, R. A., The evaluation of different types of anti-convulsant drug activity against leptazol-induced epileptogenic activity in the anaesthetized rat. *Br. J. Pharmac.,* 78 (1983), 553-9.
The role of GABA in the leptazol induced epileptogenic EEG of the anaesthetized rat. *Ibid.,* 79 (1983), 266P.

OGDEN, D. C., COLQUHOUN, D., The efficacy of agonists at the frog neuro-muscular junction studied with single channel recording. *Pflügers Arch.,* 399 (1983), 246-8.

OGDEN, D. C., GRAY, P. T. A., COLQUHOUN, D., RANG, H. P., Kinetics of acetylcholine activated ion channels in chick ciliary ganglion neurones grown in tissue culture. *Pflügers Arch.,* 400 (1984), 44-50.

PIOTROWSKI, W., A method of computer averaging biological responses from chart recordings. *Br. J. Pharmac.,* 81 (1984), 184P.

PIOTROWSKI, W., DEVOY, M. A. B., JORDAN, C. C., FOREMAN, J. C., The substance P receptor on rat mast cells and in human skin. *Agents and Actions,* 14 (1984), 420-4.

PIOTROWSKI, W., JORDAN, C. C., FOREMAN, J. C., The effect of [D-Pro^4, D-Trp^{7,9,10}] SP_{4-11} on histamine release and human skin responses induced by substance P. *Substance P Dublin 1983,* ed. P. Skrabanek and D. Powell. Dublin: Boole Press, 1983, 96-7.

RANG, H. P., RYLETT, J., The interaction between hexamethonium and tubocurarine on the rat neuromuscular junction. *Br. J. Pharmac.,* 81 (1984), 519-31.

VELLUCCI, S. V., WEBSTER, R. A., Antagonism of the anticonflict effects of chlordiazepoxide by B-carboline carboxylic acid ethyl ester, Ro 15-1788 and $ACTH_{(4-10)}$. *Psychopharmacol.,* 78 (1982), 256-60.

Is RO15-1788 a partial agonist at benzodiazepine receptors? *Eur. J. Pharmacol.,* 90 (1983), 263-8.

Antagonism of caffeine-induced seizures in mice by Ro15-1788. *Eur. J. Pharmacol.,* 97 (1984), 289-93.

WEBBER, S. E., FOREMAN, J. C., The effect of substance P and related peptides on the guinea-pig lung strip. *Agents and Actions,* 14 (1984), 425-8.

WEBSTER, R. A., O'DONNELL, R. A. (with Leach, M., Miller, A. A.), Folic acid induced kindling in rats: changes in brain amino acids. *Chemistry and Biology of Pteridines,* ed. J. A. Blair. Berlin: Walter de Gruyter, 1983, 801-5.

(with Leach, M., Miller, A. A.), Reduced cortical glutamine concentrations in electrically kindled rats. *J. Neurochem.,* 41 (1983), 1492-4.

WEBSTER, R. A., WILSON, K., HPLC measurements of the release of endogenous amino acids from rat brain in vivo. *Br. J. Pharmac.,* 80 (1983), 527P.

WRIGGLESWORTH, S. J., Heterogeneity of 5-hydroxytryptamine receptors in the rat uterus and stomach strip. *Br. J. Pharmac.,* 80 (1983), 691-7.

PHYSIOLOGY

ALLEN, D. G., The use of isolated cardiac muscle preparation. *Techniques in Life Sciences P3/1: Cardiovascular Physiology, P310,* ed. R. J. Linden. Ireland: Elsevier Scientific Publishers, 1983, 1-21.

(with Cannell, M. B.), A photomultiplier tube assembly for the detection of low light levels. *Pflügers Arch.,* 398 (1983), 165-8.

(with Morris, P. G., Orchard, C. H.), A transient alkalosis precedes acidosis during hypoxia in ferret heart. *J. Physiol.,* 343 (1983), 58-9P.

(with Orchard, C. H.), Measurements of intracellular calcium concentration in heart muscle: the effects of inotropic interventions and hypoxia. *J. Mol. Cell. Cardiol.,* 16 (1984), 117-28.

(with Orchard, C. H., Morris, P. H.), Tension and intracellular pH (pH_i) during hypoxia in ferret heart. *J. Mol. Cell. Cardiol.,* Suppl.1 (1983), 29.

ALLEN, D. G., EISNER, D. A. (with Lab, M. J., Orchard, C. H.), The effects of low Na solutions on intracellular Ca concentration and tension in ferret ventricular muscle. *J. Physiol.,* 345 (1983), 391-407.

(with Orchard, C. H.), Oscillations of intracellular [Ca^{2+}] in resting ferret cardiac muscle. *J. Physiol.,* 345 (1984), 23P.

(with Orchard, C. H.), Factors influencing free intracellular calcium concentration in quiescent ferret ventricular muscle. *J. Physiol.,* 350 (1984), 615-30.

(with Orchard, C. H.), Characterization of oscillations of intracellular calcium concentration in ferret ventricular muscle. *J. Physiol.,* 352 (1984), 113-28.

ALLEN, D. G., EISNER, D. A., NIEMAN, C. J. (with Orchard, C. H.), The effect of exposure to Na-free solutions on post-rest contractions of ferret ventricular muscle. *J. Physiol.,* 348 (1984), 53P.

ATTWELL, D., Review of I. Tasaki, *Physiology and Electrochemistry of Nerve Fibers. Neuroscience,* 10 (1983), 1041.

(with Gray, P.), Use of patch-clamp recording to study salamander photoreceptors. *J. Physiol.,* 351 (1984), 9P.

(with Nicol, G., Werblin, F. S.), Membrane potential affects photo-recurrent kinetics in vertebrate rods and cones. *Brain Res.,* 297 (1984), 164-8.

(with Werblin, F. S., Wilson, M., Wu, S. M.), Properties of double cones in the larval salamander retina. *J. Physiol.,* 341 (1983), 74P.

(with Werblin, F. S., Wilson, M., Wu, S. M.), Voltage and time-dependence of synaptic transmission from photoreceptors to horizontal cells in the salamander retina. *J. Physiol.,* 345 (1983), 69P.

(with Wilson, M.), The spatial frequency sensitivity of bipolar cells. *Biol. Cybernet.,* 47 (1983), 131-40.

(with Wilson, M.), A new method for obtaining isolated photoreceptors from the ampibian retina. *Pflügers Arch.,* 399 (1983), 238-40.

(with Wilson, M., Werblin, F. S.), Gated currents activated by hyperpolarization in vertebrate rods and cones. *29th Int. Congr. Physiol. Sci.,* (1983), 517.02.

(with Wilson, M., Wu, S. M.), Test of the principle of invariance for salamander rods and cones isolated from the retina and in the intact retina. *J. Physiol.,* 343 (1983), 82P.

(with Wilson, M., Wu, S. M.), A quantitative analysis of interactions between photoreceptors in the salamander (*Ambystoma*) retina. *J. Physiol.,* 352 (1984), 703-37.

BANKS, B. E. C., Nerve growth factor — an enigma still? *Biochem. Soc. Trans.,* 12 (1984), 173-6.

(with Dempsey, C. E., Barboni, E.), Anti-inflammatory activity in the venom of *Apis Mellifera* (the common European Honey Bee). *Toxicon,* suppl.3 (1983), 29-32.

(with Vernon, C. A., Warner, J. A.), Nerve growth factor has anti-inflammatory activity in the rat hindpaw oedema test. *Neurosci. Lett.,* 47 (1984), 41-5.

BISCOE, T. J., DUCHEN, M. R., PASCOE, J. E., GABA/benzodiazepine interactions in the mouse hippocamal slice. *J. Physiol.,* 341 (1983), 8-9P.

Use of the RML 380Z microcomputer for on-line measurement of input resistance of cells in the mouse hippocampal slice. *Ibid.,* 2-3P.

BISCOE, T. J., FRY, J. P., GABA and benzodiazepine receptors in neurologically mutant mice. *Actions and Interactions of GABA and Benzodiazepines,* ed. N. G. Bowery. New York: Raven Press, 1984, 217-37.

BISCOE, T. J., FRY, J. P., RICKETS, C., Autoradiography of benzodiazepine receptor binding in the central nervous system of the normal C57BL6J mouse. *J. Physiol.,* 352 (1984), 495-508.

Changes in benzodiazepine receptor binding as seen autoradiographically in the central nervous system of the *spastic* mouse. *Ibid.,* 509-16.

BROWN, LUCY M., HUXLEY, A. F. (with Gonzalez-Serratos, H.), Structural studies of the waves in striated muscle fibres shortened passively below their slack length. *J. Mus. Res. & Cell Mot.,* 5 (1984), 273-92.

(with Gonzalez-Serratos, H.), Sarcomere and filament lengths in passive muscle fibres with wavy myofibrils. *J. Mus. Res. & Cell Mot.,* 5 (1984), 293-314.

CAVANAGH, M. E., CORNELIS, M. E. P., DZIEGIELEWSKA, K. M., EVANS, C. A. N., REYNOLDS, M. L., SAUNDERS, N. R. (with Lorscheider, F. L., Mollgard, K.), Comparison of proteins in CSF of lateral and IVth ventricles during early development of fetal sheep. *Dev. Brain Res.,* 11 (1983), 159-67.

DAVEY, N. J., ELLAWAY, P. H., Irregularity of discharge associated with high incidence of synchronized firing between gamma motoneurones in the cat. *J. Physiol.,* 351 (1984), 18P.

DAWSON, M. JOAN, Phosphorus metabolites and the control of glycolysis studied by nuclear magnetic resonance. *Int. Series on Sport Sciences, Biochemistry of Exercise,* 13 (1983), 116-25.

DAWSON, M. JOAN, WILKIE, D. R., Muscle and brain metabolism studied by ^{31}P nuclear magnetic resonance. *Recent Advances in Physiology,* ed. P. Baker. Edinburgh: Churchill Livingstone, 1984, 247-76.

(with Edwards, R. H. T., Griffiths, J. R., Gordon, R.), Nuclear magnetic resonance spectroscopy in research and clinical diagnosis. *Europ. J. Clin. Invest.,* 13 (1983), 429-31.

DZIEGIELEWSKA, K. M., CORNELIS, M. E. P., SAUNDERS, N. R. (with Bock, E., Mollgard, K., New, H.), Identification of fetuin in human and rat fetuses and in other species. *Comp. Biochem. Physiol.,* 76A, No.2 (1983), 241-5.

DZIEGIELEWSKA, K. M., EVANS, C. A. N., REYNOLDS, M. L., SAUNDERS, N. R. (with New, H.), Synthesis of plasma proteins by rat fetal brain and choroid plexus. *Int. J. Devl. Neurosci.,* 2, No.3 (1984), 215-22.

DZIEGIELEWSKA, K. M., SAUNDERS, N. R. (with Hinds, L. A., Tyndale-Biscoe, C. H.), The Tammar Wallaby (Macropus eugenii): a model for studies of early development of the nervous system. *J. Physiol.,* 351 (1984), 26P.

(with New, H.), Transferrin in fetal rat brain and cerebrospinal fluid. *Int. J. Devl. Neurosci.,* 1, No.6 (1983), 369-73.

EISNER, D. A. (with Lederer, W. J., Sheu, S.-S., Vaughan-Jones, R. D.), The effects of Na-Ca exchange on membrane currents in sheep cardiac Purkinje fibers. *Electrogenic Transport: Fundamental Principles and Physiological Implications,* ed. M. P. Blaustein and M. Lieberman. New York: Raven Press, 1984, 373-80.

(with Lederer, W. J., Vaughan-Jones, R. D.), The electrogenic Na pump in mammalian cardiac muscle. *Electrogenic Transport: Fundamental Principles and Physiological Implications,* ed. M. P. Blaustein and M. Lieberman. New York: Raven Press, 1984, 193-213.

(with Lederer, W. J., Vaughan-Jones, R. D.), The effects of sodium pump inhibition on contraction in sheep cardiac Purkinje fibers. *Current Topics in Membranes and Transport,* 19 (1983), 885-90.

(with Lederer, W. J., Vaughan-Jones, R. D.), The relationship between twitch tension and intracellular Na activity in sheep cardiac Purkinje fibers. *J. Physiol.,* 341 (1983), 28-9P.

(with Lederer, W. J., Vaughan-Jones, R. D.), Is the Na-Ca exchange mechanism electrogenic? *Biophys. J.,* 41 (1983), 291a.

(with Richards, D. E.), Kinetic evidence in favour of a consecutive model of the sodium pump. *Current Topics in Membranes and Transport,* 19 (1983), 547-51.

(with Vaughan-Jones, R. D.), Do calcium-activated potassium channels exist in the heart? *Cell Calc.,* 4 (1983), 371-86.

(with Vaughan-Jones, R. D., Lederer, W. J.), Comments on 'active transport and inotropic state in guinea pig left atrium' which appeared in Circ. Res. 52: 411-422, 1983. *Circ. Res.,* 53 (1983), 834-5.

EISNER, D. A., ALLEN, D. G. (with Orchard, C. H.), Oscillations of intracellular [Ca^{2+}] in mammalian cardiac muscle. *Nature,* 304 (1983), 735-8.

(with Orchard, C. H.), Control of intracellular ionized calcium concentration by sarcolemmal and intracellular mechanisms. *J. Mol. Cell. Cardiol.,* 16 (1984), 137-46.

ELLAWAY, P. H. (with Murthy, K. S. K.), Reflex effects from high threshold neck muscle afferents on hind limb extensor gamma motoneurones in the cat. *Exp. Brain Res.,* 54 (1984), 212-16.

ELLAWAY, P. H., GARDNER-MEDWIN, A. R., PASCOE, J. E., Decision limits for significance of changes in the cumulative sum (cusum) of the peristimulus time histogram. *J. Physiol.,* 341 (1983), 4-5P.

GARDNER-MEDWIN, A. R., A foot in the vitreous fluid. *Nature,* 309 (1984), 113.

GARDNER-MEDWIN, A. R., SKELTON, J. L. (with George, S. A.), The effects of carbon dioxide, oxygen and pH on spreading depression in the isolated chick retina. *Brain Res.,* 288 (1983), 229-33.

HARKNESS, R. D. (with Isham, V.), A bivariate spatial point pattern of ants' nests. *Appl. Statist.,* No.3 (1983), 293-303.

HUXLEY, A. F., The Darwinian debate. *The Best of the Science Show,* ed. R. Williams. Melbourne: Nelson, in association with the Australian Broadcasting Corporation, 1983, ix + 290 and 192-5.

Centenaries. *Trans. Roy. Soc. Canada,* ser.IV, vol.XX (1982), 27-34.

Anniversary address by the President. *Suppl. Roy. Soc. News,* vol.2, No.6 (1983).

Address of the President, Sir Andrew Huxley, O.M., at the Anniversary Meeting, 30 November 1983. *Proc. Roy. Soc. Lond.,* A, 391 (1984), 215-30; *Ibid.,* B, 220 (1984), 383-98. See also: *Conquest,* 173, *Res. Def. Soc.* (1984), 5-13.

Grandfather and grandson. *Notes and Records of Roy. Soc. Lond.,* 38, No.2 (1984), 147-51. Sir Andrew Huxley comments. *Nature,* 309 (1984), 713-14.

LIPPOLD, O. C. J. (with Bigland-Ritchie, B., Johansson, R., Smith, S., Woods, J. J.), Changes in motoneurone firing rates during sustained maximal voluntary contractions. *J. Physiol.,* 340 (1983), 335-46.

(with Bigland-Ritchie, B., Johansson, R., Woods, J. J.), Contractile speed and EMG changes during fatigue of sustained maximal voluntary contractions. *J. Neurophysiol.,* 50 (1) (1983), 313-24.

(with Burn, J. A., Pryor, M.), Proprioceptors and normal tremor. *J. Physiol.,* 348 (1984), 559-72.

LIPPOLD, O. C. J., DARTON, K. (with Burne, J. A.), Method for determining the role of proprioceptors in generating tremor. *J. Physiol.,* 341 (1983), 2P.

LYNN, B. (with Abrahams, V. C., Richmond, F. J. R.), Organization and sensory properties of small myelinated fibres in the dorsal cervical rami of the cat. *J. Physiol.,* 347 (1984), 177-87.

(with Barasi, S.), Effects of sympathetic stimulation on mechanoreceptor and nociceptor afferent units with small myelinated (A-x) and unmyelinated (C) axons innervating the rabbit pinna. *J. Physiol.,* 341 (1983), 51P.

LYNN, B., PINI, A., Axonal recovery and development of a long-lasting peripheral block in C-fibre polymodal nociceptors after local nerve treatment with capsaicin in the rat. *J. Physiol.,* 350 (1984), 34P.

MOBBS, P. G., Neural networks in the mushroom bodies of the honey bee. *J. Insect. Physiol.,* 30, No.1 (1984), 43-58.

(with Fletcher, W. A., Goodman, L. J., Guy, R. G.), Horizontal and vertical motion detectors in the ventral nerve cord of the honey bee, *Apis mellifera. J. Physiol.,* 351 (1984), 15P.

(with Kaulen, P., Erber, J.), Current source-density analysis in the mushroom bodies of the honey bee *(Apis mellifera carnica). J. Comp. Physiol.,* A, 154 (1984), 569-82.
(with Mercer, A. R., Davenport, A. P., Evans, P. D.), Biogenic amines in the brain of the honey bee, *Apis mellifera. Cell Tiss. Res.,* 234 (1983), 655-77.

REYNOLDS, M. L., SAUNDERS, N. R. (with Jacobsen, M., Mollgard, K.), The choroid plexus in fetal sheep during development with special reference to intracellular plasma proteins. *Dev. Brain Res.,* 8 (1983), 77-88.
(with Mollgard, K.), The distribution of plasma proteins during early embryonic development in the sheep. *Anat. Embryol.,* 168 (1983), 227-40.

SAUNDERS, N. R. (with Mollgard, K.), Development of the blood-brain barrier. *J. Devl. Physiol.,* 6 (1984), 45-57.
(and others), Distribution of alpha-fetoprotein in fetal plasma and in amniotic and allantoic fluids of the pig. *J. Reprod. Fert.,* 70 (1984), 605-7.

WILKIE, D. R., The control of glycolysis in living muscle studied by nuclear magnetic resonance and other techniques. *Biochem. Soc. Trans.,* ii, No.3 (1983), 244-6.
(with Griffiths, J. R., Cady, E.), Surface coil NMR in diagnosis. *Lancet,* ii (1983), 1082-3.
(with Griffiths, R. D., Cady, E., Edwards, R. H. T.), ^{31}Phosphorus nuclear magnetic resonance used in a double blind trial of allopurinol in Duchenne muscular dystrophy (Abstract). *Clin. Sci.,* 66 (1984), 20P.
(and others), ^{31}PNMR studies of a human tumour in situ. *Lancet,* i (1983), 1435-6.
(and others), Surface coil NMR spectroscopy of brain. *Lancet,* i (1984), 459.

WILKIE, D. R., DAWSON, M. JOAN (with Edwards, R. H. T., Gordon, R. E., Shaw, D.), ^{31}PNMR studies of resting muscle in normal human subjects. *Contractile Mechanisms in Muscle. Advances in Experimental Medicine and Biology,* ed. G. H. Pollack and H. Sugi. New York: Plenum Press, 1984, 333-48.

WILSON, M. G. A., WOLEDGE, R. C. (with Curtin, N. A., Howarth, J. V., Rall, J. A.), Simultaneous heat and tension measurements from single muscle cells. *Contractile Mechanisms in Muscle,* ed. G. H. Pollack and H. Sugi. New York: Plenum Press, 1984.

WRAY, SUSAN, The effect of pregnancy and lactation on the mesometrium of the rat. *J. Physiol.,* 340 (1983), 525-33.
(with Tofts, P.), Changes with age of phosphorus metabolites in rat brain, detected by nuclear magnetic resonance (NMR). *J. Physiol.,* 348 (1983), 26P.

FACULTY OF CLINICAL SCIENCES

BIOCHEMICAL PATHOLOGY

ELECTRICWALA, A., RILEY, P. A., LATTER, A., SUTTON, P. M., ATKINSON, T., New fibrinolytic enzymes from epthelial cells. *Progress in Fibrinolysis,* vol.VI, ed. J. F. Davidson et al. Edinburgh: Churchill Livingstone, 1983, 151-3. (ch.35.)

PATEL, R., HOLA, M., RILEY, P. A. (with Wilkie, D.), Detection of primary antimitochondrial activity of drugs in cultured mammalian cells utilising glutamine as the carbon source. *Expl. Cell Biol.,* 52 (1984), 176-82.

POULSOM, R., BOOT-HANDFORD, R. P., HEATH, H., The effects of long-term treatment of streptozotocin-diabetic rats with an aldose reductase inhibitor. *Exp. Eye Res.,* 37 (1983), 507-15.

RILEY, P. A., Editor and contributor, *Hydroxyanisole: Recent Advances in Anti-Melanoma Therapy.* Oxford: IRL Press, 1984. 248 pp.

WHARTON, S. A., RILEY, P. A., Lysosomes and ageing. *Lysosomes in Biology and Pathology,* ed. J. T. Dingle, R. T. Dean and W. Sly. Amsterdam: Elsevier, 1984, 401-9. (ch.6.)

DENTAL SCHOOL

COHEN, A. M., Uncertainty in cephalometrics. *Brit. J. Orthodontics,* 11 (1984), 44-8.

COHEN, A. M., LINNEY, A. D. (with Ip, H. H.-S.), Computer location and measurement of cephalometric points. *Brit. Soc. Dent. Res., Abstract* No. 31 (1984).

COHEN, A. M., MOSS, J. P., WILLIAMS, D. W., Oral hygiene instruction prior to orthodontic treatment. *Brit. Dent. J.,* 155 (1983), 277-8.

DONOGHUE, H. D., PERRONS, C. J., HUDSON, D. E., The role of hydrogen peroxide in streptococcal interactions in an artificial mouth. *Caries Res.,* 18, 2 (1984), 162-3.

FLETCHER, A. M. (with Ritchie, G. M., Amin, W. M., Dodd, A. W.), Tooth bond characteristics of some acrylic denture base polymers. *Proc. European Prosthodontic Assoc.,* 6 (1983), 32-4.

HUDSON, D. E., DONOGHUE, H. D., PERRONS, C. J., Continuous pH measurement of *Streptococcus mutans* BHT and *Streptococcus mitior* LPA-1 grown in an artificial mouth. *J. dent. Res.,* 63, 4 (1984), 516.

JAMES, D. R. (with Irvine, G. H.), Autogenous rib grafts in maxillo-facial surgery. *J. Max-fac. Surg.,* 11 (1983), 201-3.

LIKEMAN, P. R., PICTON, D. C. A., An experiment in tooth and soft tissue support for a dental prosthesis in a monkey. *J. dent. Res.,* 63 (1984), 521.

LINNEY, A. D. (with Bulski, W. J., Kam, K. C.), Computation of radio-therapeutic three-dimensional dose distributions using a minicomputer. *Radiobiologia-Radiotherapia,* 24 (1983), H.5, 629-37.

LONGMAN, C. J., PEARSON, G. J., Variation in temperature of the oral cavity during imbibation of hot and cold fluids. *J. dent. Res.,* 63 (1984), 520.

MOSS, J. P., Public health orthodontics for the developing nations. *J. Indian Dent. Assoc.,* 55 (1983), 405-8.

MOSS, J. P., JAMES, D. R., An investigation of a group of 35 consecutive patients with a First Arch Syndrome *J. Max-fac. Surg.,* 22 (1984), 157-69.

MOSS, J. P., WILLMOT, D. R., A cephalometric and electromyographic investigation of patients treated for the correction of mandibular prognathism by mandibular surgery only. *Brit. J. Orthodontics,* 11 (1984), 59-68.

PEARSON, G. J., Finishing of glass ionomer cements. *Brit. dent. J.,* 155 (1983), 226-8.
(with Atkins, A. S.), Changes in clinically significant physical properties of glass ionomer cements during evolution. *J. dent. Res.,* 63 (1984), 501.

PEARSON, G. J., PICTON, D. C. A. (with Braden, M. A.), A novel method of testing the reaction of oral mucosa to an experimental soft lining material. *J. dent. Res.,* 63 (1984), 512.

PICTON, D. C. A., Changes in axial mobility of undisturbed teeth and following sustained instrusion in adult monkeys. *J. dent. Res.,* 63 (1984), 519.

PICTON, D. C. A., MOSS, J. P., The approximal movements of adjacent isolated teeth in monkeys following intra-papillary injections of chlorpheniramine. *J. dent. Res.,* 63 (1984), 490.
Short-term extrusion of isolated teeth of adult monkeys. *Archs. Oral Biol.,* 29 (1984), 425-9.

PUNNIA MOORTHY, A., Oral manifestations in Maffuci Syndrome. *Brit. dent. J.,* 155, 5 (1983), 160-1.

PUNNIA MOORTHY, A., O'NEIL, R., COGHLAN, K. D., rug therapy among dental outpatients. *Brit. dent. J.,* 156, 7 (1984), 163.

WAITE, I. M., The assessment of the post surgical results following the combined laterally repositioned flap and gingival graft procedure. *Quintessence Int.,* 15, 4 (1984), 441.

WATSON, T. F. (with Boyde, A.), The tandem scanning reflected light microscope in conservative dentistry. *J. dent. Res.,* 63, 4 (1984), 199.

EXPERIMENTAL PATHOLOGY

ALLAN, D. (with Davies, A. A., Wigglesworth, N. M., Owens, R. J., Crumpton, M. J.), Nonidet P-40 extraction of lymphocyte plasma membrane — characterisation of the insoluble residue. *Biochem. J.,* 219 (1984), 301-8.

ALLAN, D., COCKCROFT, S., The fatty acid composition of 1, 2-diacylglycerol and polyphosphoinositides from human erythrocyte membranes. *Biochem. J.,* 213 (1983), 555-7.

ALLAN, D., RAVAL, P. J., Some morphological consequences of uncoupling the lipid bilayer from the plasma membrane skeleton in intact erythrocytes. *Biomed. Biochim. Acta,* 42 (1983), 11-16.

BALDWIN, J. M., GOMPERTS, B. D., Detergent solubilisation of the rabbit neutrophil receptor for chemotactic formyl peptides. *Eur. J. Biochem.,* 135 (1983), 515-18.

COCKCROFT, S., Does phosphatidytinositol breakdown control Ca^{2+}-gating mechanisms? *Trends in Pharmacological Sciences,* 2 (1981), 340-2.

A mechanism for muscarinic inhibition of cAMP accumulation — possible role for phosphatidylinositol hydrolysis. *Ibid.,* 3 (1982), 139.

Phosphatidylinositol metabolism in mast cells and neutrophils. *Cell Calcium,* 3 (1982), 337-49.

COCKCROFT, S., ALLAN, D., BALDWIN, J. M., The Ca^{2+} activated polyphosphoinositide phosphodiesterase of human and rabbit neutrophil membranes. *Biochem. J.,* 221 (1984), 447-82.

FOREMAN, R. C., JUDAH, J. D. (with Colman, A.), Xenopus oocytes can synthesise but do not secrete the Z-variant of human α-1-antitrypsin. *FEBS Lett.,* 168 (1984), 84-8.

GOMPERTS, B. D., Involvement of guanine nucleotide-binding protein in the gating of Ca^{2+} by receptors. *Nature,* 306 (1983), 64-6.

KEAST, C. G. (with Kortoghiorghes, G.), A simple metabolic cage for mice. *Lab. Pract.,* 33 (1984), 90-1.

RAVAL, P. J., ALLAN, D., Phospholipid asymmetry in the membranes of intact human erythrocytes and in spectrin-free microvesicles derived from them. *Biochim. Biophys. Acta,* 772 (1984), 192-6.

TAYLOR, J. A., ALLAN, D., JUDAH, J. D. (with Limbrick, A. R.), Isolation of highly purified Golgi membranes from rat liver: use of cycloheximide in vivo to remove contents. *Biochim. Biophys. Acta,* 769 (1984), 171-8.

TAYLOR, J. A., JUDAH, J. D. (with Lawson, D.), Analysis and purification of the blood sinusoidal domain of rat liver plasma membrane. *Biochim. Biophys. Acta,* 732 (1983), 154-9.

DI VIRGILIO, F., GOMPERTS, B. D., Inonophore monensin induces Na+ dependent secretion from rabbit neutrophils: requirement for intracellular Ca^{2+} stores. *Biochim. Biophys. Acta,* 763 (1983), 292-8.

Cytosol Mg^{2+} modulates Ca^{2+} ionophore induced secretion from rabbit neutrophils. *FEBS Lett.,* 163 (1983), 315-18.

HISTOPATHOLOGY

GOULD, S. J. (with Smith, J. F.), Spinal cord transection, cerebral ischaemic and brain-stem injury in a baby following a Kielland's forceps rotation. *Neuropath. & Appl. Neurobiol.,* 10 (1984), 151-8.

GRIFFITHS, M. H. (with Bradford, R., Goldstraw, P.), Hypertrophic osteoarthropathy in primary bronchogenic carcenoid tumour. *Brit. J. Dis. Chest,* 78 (1984), 275-81.

(and others), An immunohistological study of secondary Sjögrens syndrome. *Ann. Rhem. Dis.,* 43 (1984), 470-6.

ISAACSON, P. G., Histiocytic disorders in lymphoreticular pathology. *Recent Advances in Histopathology,* vol.12, ed. P. P. Anthony and R. N. M. MacSween. London: Churchill Livingstone, 1984, 197-221.

Extranodal malignant lymphoma arising from mucosa associated lymphoid tissue. *Cancer,* 53 (1984), 2515-24.

(with DuBoulay, C. E. H., Fairbrother, J.), Mucosal prolapse syndrome — a unifying concept for solitary ulcer syndrome and related disorders. *J. Clin. Pathol.,* 36 (1983), 1264-8.

(with Herbert, A., Wright, D. H., Smith, J. L.), Primary malignant lymphoma of the lung. *Hum. Pathol.,* 15 (1984), 415-22.

(with Shepherd, H. A., Patel, C., Bamforth, J.), Upper gastrointestinal endoscopy in systemic vasculitis presenting as an acute abdomen. *Endoscopy,* 15 (1983), 307-11.

(with Wright, D. H.), *Biopsy Pathology of the Lymphoreticular System.* London: Chapman and Hall, 1983. 337 pp.

(with Wright, D. H.), Malignant lymphoma of mucosa associated lymphoid tissue. *Cancer,* 52 (1983), 1410-16.

(and others), Symposium on histiocytic or large cell lymphomas. *Malignant Lymphomas: a pathology annual monograph,* ed. S. C. Somers and P. R. Rosen. Norwalk, Connecticut: Appleton Century Crofts, 1983, 109-68.

LUCAS, S. B. (with De Cock, K. M., Hutt, M. S. R.), Idiopathic portal hypertension and non-cirrhotic portal fibrosis. *Liver,* 3 (1983), 261-2.

(with Flavell, D. J.), Promotion of N-nitrosodimethylamine-initiated bile duct carcinogenesis in the hamster by the human liver fluke, *Opisthorcis viverrini. Carcinogenesis,* 4 (1983), 927-30.

(with Mati, J. G. K., Aggarwal, V. P., Sanghvi, H.), The pathology of perinatal mortality in Nairobi, Kenya. *Bull. de la societé de Pathologie Exotique,* 76 (1983), 579-83.

(and others), Obscure splenomegaly in the tropics that is not the tropical splenomegaly syndrome. *Brit. Med. J.,* ii (1983), 1347-8.

MEDICAL MICROBIOLOGY

COHEN, A., HO-TERRY, L., Rubella antibodies in medical students. *Brit. Med. J.,* 287 (1983), 1028.

HO-TERRY, L., COHEN, A., The role of glycosylation on haemagglutination and immunological reactivity of rubella virus. *Arch. Virol.,* 79, (1984), 139-46.

(with Tedder, R. S.), Immunological characterisation of rubella virion polypeptides. *J. Med. Microbiol.,* 17 (1983), 105-9.

(with Terry, G. M.), Detection of rubella virus specific IgM by fast protein liquid chromatography and enzyme-linked immunosorbent assay. *J. Med. Microbiol.,* 17 (1984), 177-80.

BLACKWELL, R. J., Practical applications of the physics of ultrasound in B-scan imaging. *Ultrasound in Perinatal Care,* ed. M. J. Bennett. Chichester: Wiley, 1984, 1-19.

New developments in equipment. *Clinics in Obstetrics and Gynaecology,* 10 (1983), 371-93.

CADY, E. B., DELPY, D. T., TOFTS, P. S., Clinical 31-P NMR spectroscopy. *Physical Principles and Clinical Applications of NMR.* London: Hospital Physicists' Association, 1984.

CADY, E. B., GARDENER, J. E., Tissue characterisation of normal and dystrophic muscle using broad-band back-scattered RF data. *Ultrasound Interaction in Biology and Medicine,* ed. M. Millner, E. Rosenfeld, and O. Cobet. New York: Plenum, 1983, 77-84.

(with Edwards, R. H. T.), Ultrasonic tissue characterisation of skeletal muscle. *Europ. J. Clinical Investigation,* 13 (1983), 469-73.

CADY, E. B., TOFTS, P. S., DELPY, D. T. (with Costello, A. M. de L., Dawson, M. J., Hope, P. L., Reynolds, E. O. R., Wilkie, D. R.), Non-invasive investigation of cerebral metabolism in newborn infants by 31P NMR spectroscopy. *Proc. ESPR. Montpelier* (1983), 4-7.

CHU, A. C. M., ST ANDREW, D., Efficient, inexpensive rapid cuff inflator for venous occlusion plethysmography. *Clin. Phys. Physiol. Meas.,* 4 (1983), 339-41.

CLIFTON, J. S., Physics in the management of the newborn. *Application of Physics to Medicine and Biology,* ed. G. Alberi, Z. Bajzer and P. Baxa. Singapore: World Scientific Press, 1983, 219-46.

Computer planning of radiotherapy treatment using CT data. *Aktuality Z Klinickej Onkologie, Bratislava,* 4 (1983), 115-23.

The contribution of medical physics and engineering to health care. *Australasian Phys. Engng Sci. in Health Care,* 7 (1984), 3-12.

DELPY, D. T., HALSALL, D. N., MOSSE, C. A., PARKER, D., WHITEHEAD, M. D. (with Osborne, I. M.), The design and construction of a transcutaneous oxygen electrode requiring no diffusion membrane. *Continuous Transcutaneous Blood Gas Monitoring,* ed. A. and R. Huch. Marcel Dekker, 1983, 117-22.

DELPHY, D. T., HALSALL, D. N., PARKER, D., WHITEHEAD, M. D., A thermal clearance tissue perfusion monitor for investigating the correlation between transcutaneous and arterial gas measurements. *Continuous Transcutaneous Blood Gas Monitoring,* ed. A. and R. Huch. Marcel Dekker 1983, 57-68.

GRAY, K. C. (with Flynn, F. V.), A microcomputer system for handling data from a SMAC 1 analyser. *MEDINFO-83 Seminars,* ed. O. Fokkens et al. Amsterdam: North-Holland, 1983, 220-1.

(with Flynn, F. V.), A microcomputer system for processing radioimmunoassay data. *Ibid.,* 257-8.

(with Flynn, F. V.), A microcomputer system for handling data from a centrifugal analyser. *Ibid.,* 297-8.

GRINDROD, S. R., TOFTS, P. (with Edwards, R. H. T.), Investigation of human skeletal muscle structure and composition in X-ray computerised tomography. *Europ. J. Clin.* 13 (1983), 465-8.

(with Jones, D. A., Round, J. A., Edwards, R. H. T.), Size and composition of the calf and quadriceps muscles in Duchenne muscular dystrophy. *J. Neurol. Sci.,* 60 (1983), 307-22.

LEWIS, C. A. (with Belsham, P. A.), Isotopic assessment of calf pump function. *Br. J. Surg.,* 74 (1984), 325.

(with O'Leary, K., Jackson, D. F.), Corrections to measurements of pion capture ratios. *Phys. Med. Biol.,* 29 (1984), 253.

LEWIS, C. A., SHORT, M. D., TOLFREE, S. E. J. (with Belsham, P. A., Adiseshiah, M.), Investigation of lower limb blood flow using an inhaled ^{133}Xe technique. *Nuc. Med. Comm.,* 5 (1984), 229.

LINNEY, A. D. (with Bulski, W. J., Kam, K. C.), Computation of radiotherapeutic three-dimensional dose distributions using a minicomputer. *Radiobiologica-Radiotherapia,* 24 (1983), 629-37.

MILLS, T. N., Laser fragmentation of biliary calculi. *Proc. B.M.L.A.* (1983).

(with Adams, J., Swain, C. P., Bown, S. G., Salmon, P. R.), A controlled study of the effect of different power levels, spot separations and laser wavelength on treatment of portwine stains. *Lasers in Surgery and Medicine,* 3 (1983), 3.

(with Bown, S. G., Coleridge-Smith, P. D., Hobbs, K. E. F., Salmon, P. R.), Interstitial treatment of tumours with the NdYAG laser. *Lasers in Surgery and Medicine,* 3 (1983), 131.

(with Swain, C. P., Dark, J. M., Bown, S. G., Salmon, P. R., O'Sullivan, J.), A controlled study of liquid and dry monopolar electrocoagulation in experimental canine bleeding gastric ulcers using computerised energy monitoring. *Clin. Sci.,* 64 (1983), 2-15.

(with Swain, C. P., Dark, J. M., Morrison, S., Salmon, P. R.), The 'hot squeeze' bipolar forceps. A more effective endoscopic method of stopping bleeding from large vessels in the gastrointestinal tract. *Gut,* 24 (1983), 460.

(with Swain, C. P., Watson, G. M., Salmon, P. R.), A comparison of thermal and photoacoustic fragmentation of biliary calculi using continuous wave and giant pulse lasers. *Lasers in Surgery and Medicine,* 3 (1983), 191.

(and others), Which electrode? A consumers guide to electrocoagulation of upper gastrointestinal bleeding. *Gut,* 24 (1983), 460.

(and others), Thermal verses photoacoustic fragmentation of biliary calculi using continuous wave and giant pulse lasers. *Gastrointestinal Endoscopy,* 29 (1983), 185.

(and others), Laser destruction of gallstones: a comparison of thermal destruction using continuous wave lasers with photoacoustic disintegration using giant pulse lasers. *Clin. Sci.,* 65 (1983), 41.

MILLS, T. N., CLIFTON, J. S. (with Swain, C. P., Dark, J. M., Bown, S. G., Salmon, P. R.), A comparative study of the safety and efficiency of liquid and dry monopolar electrodes in experimental bleeding ulcers using computerised energy monitoring. *Gastroenterology* (1983), 93-103.

MULVEY, P. M. (with Godlee, J. N.), Technique and dosimetry for total body irradiation. *J. Europ. de Radiotherapie,* 3 (1983), 241-2.

PARKER, D., DELPY, D. T., Blood gas tensions — continuous measurement. *Encyclopaedia of Physics in Medicine and Biology.* Oxford: Pergamon, 1984.

SHORT, M. D., Which gamma camera. *Nucl. Med. Commun.,* 5 (1984), 131-44.

Gamma-camera systems. *Nucl. Instr. and Methods,* 221 (1984), 142-9.

SHORT, M. D., MULVEY, P. J. (with Todd, J. H., Ramsey, N. W.), *Radiation Protection Procedures in the Use of* ^{99m}*Tc.* Topic Group report 39. London: Hospital Physicists' Association, 1984. 16 pp.

TODD-POKROPEK, A. E., Image processing with special application to single photon emission computerized tomography. *Application of Physics to Medicine and Biology,* ed. G. Alberi, A. Bajzer, and P. Baxa. Singapore: World Scientific Press, 1983, 391-428.

Edge detection and wall motion abnormalities in cardiology. *Physical Techniques in Cardiological Imaging,* ed. M. D. Short, D. A. Pay, S. Leeman and R. M. Harrison. Adam Hilger, 1983, 125-41.

Quality control of the gamma camera computer interface. *Quality Control of Nuclear Medicine Instrumentation. CRS-38,* ed. R. F. Mould. London: HPA Publications, 1983, 54-70.

The evaluation of medical imaging procedures: an example of an intercomparison between a black and white and a colour display. *IEEE Trans. Medical Imaging,* MI-2 (1983), 19-23.

A mathematical model of the deconvolution of the renogram *Nucl. Med. Communications,* 5 (1983), 214.

Performance measurement and quality control in gamma-tomography: the analysis of artefacts. *Annales de Radiologie,* 1 (1983), 23-30.

Non-circular orbits for the reduction of uniformity artefact. *Phys. Med. Biol.,* 28 (1983), 309-13.

A simple system for generating non-circular orbits in SPECT in order to reduce the importance of uniformity artefacts. *J. Nucl. Med.* (1983), 74.

The mathematics and physics of emission computerised tomography. *Publications Soc. of Nucl. Med. New York,* 1983, 3-31.

Which SPECT? *Nucl. Med. Commun.,* 5 (1984), 421-37.

Performance testing rotating gamma camera SPECT systems. *J. Nucl. Med.,* 25 (1984), 5-6.

(with Kwok, C. Y., Cavailloles, F.), Edge detection: an intercomparison of different algorithms *Medical Image Processing,* ed. M. L. Goris. Stanford University, 1983, 329-41.

(with Soussaline, F., Raynaud, C., Kellershohn, C.), Estimates of kidney volume by single photon emission tomography: a preliminary report. *Eur. J. Nucl. Med.,* 8 (1983), 72-4.

(with Vivian, G. C., Barratt, T. M., Gordon, I.), Renal parenchymal determination and analysis during dynamic 99mTcm-DTPA scans in children. *Nucl. Med. Commun.,* 5 (1984), 35-40.

TODD-POKROPEK, A., CLARKE, G. (with Godley, M., Ransley, P. G., Gordon, I.), Kidney volume estimation using DMSA. *Nucl. Med. Commun.,* 5 (1984), 244.

TODD-POKROPEK, A., MARSH, R. (with Gillardi, M. C., Fazio, F.), The uptake of labelled amines- scatter correction in SPECT. *Nucl. Med. Commun.,* 5 (1984), 418.

(with Gillardi, M. C., Gerundini, P., Fazio, F.), An object independent attenuation correction in SPECT: eliminating the effects of scatter and collimator PSF. *J. Nucl. Med.,* 25 (1984), 14.

TOFTS, P. S., CADY, E. B., DELPY, D. T. (with Costello, De L., Hope, P. L., Reynolds, E. O. R., Wilkie, D. R., Gould, S. J., Edwards, D.), Surface coil NMR spectroscopy of brain, *Lancet,* 25 February 1984, 459.

TOFTS, P. S. (with Wray, S.), Changes with age of phosphorous-metabolite in rat brain, detected by nuclear magnetic resonance. *J. Physiol.,* 26 (1983), 384.

(with Wray, S.), The time course of phosphorous-metabolite changes in the developing rat brain estimated by P-31 nuclear magnetic resonance spectroscopy. *Proc. Physiol. Soc.,* 30 (1984), 147.

TOLFREE, S., SHORT, M. (with Spiro, S. G., Singh, C. A., Partridge, M.), Direct labelling of ipratromiun bromide aerosol and its deposition pattern in normal subjects and patients with chronic bronchitis. *Thorax,* 39 (1984), 432-5.

MEDICINE

CADY, E. B., EDWARDS, R. H. T. (with Gardener, J. E.), Ultrasonic tissue characterisation of skeletal muscle. *Eur. J. Clin. Invest.,* 13 (1983), 469-73.

CADY, E. B., REYNOLDS, O. E. D., WILKIE, D. R. (and others), Tissue localisation by surface coil NMR spectroscopy of the brain in newborn infants. *Lancet,* i (1984), 459.

CAMBRIDGE, G. (and others), Myocarditis in siblings leading to chronic heart failure. *Europ. Heart J.,* 4 (1983), 742-6.

CHAMBERS, D. R., Hospital safety. *Int. Med.,* 3 (1983), 11-13.

Ethics or medical ethics. *Med. Sci. Law,* 24 (1984), 17-25.

Le secret professionnel. *Droit et éthique médicale,* 11 (1984), 23-6.

COLLINS, K. J., *Hypothermia: the facts.* Oxford University Press, 1983. 136 pp.

Indoor environment and health of the elderly. *W.H.O. Working Group Report on Housing Indoor Climate and Health of the Elderly, Graz, 1982* (1983), 1-3.

COLLINS, K. J., EXTON-SMITH, A. N., Thermal homeostasis in old age. *J. Am. Ger. Soc.,* 31 (1983), 519-24.

The accuracy of clinical thermometers. *Brit. Med. J.,* 287 (1983), 1549-50.

CORRIGAN, A. P. (with Rider, C. C.), Multiple chromatographic forms of ATP citrate lyase from rat liver. *Biochem. J.,* 214 (1983), 299-307.

CRONIN, C. J. C., OWENS, C. W. I., PRICHARD, B. N. C., Exercise testing in hypertensive patients. *J. Am. Med. Assoc.,* 251 (1984), 343.

DAWSON, M. J., WILKIE, D. R., Muscle and brain metabolism studied by ^{31}P nuclear magnetic resonance. *Recent Advances in Physiology,* ed. P. Baker. Edinburgh: Churchill Livingstone, 1983, 247-76.

Phosphorus metabolites and the control of glycolysis studied by nuclear magnetic resonance. *Biochemistry of Exercise,* 13 (1983), 116-25.

DEVALIA, J. L., McLEAN, A. E. M., Covalent binding and the mechanism of paracetamol toxicity. *Biochem. Pharmacol.,* 32 (1983), 2602-3.

EDWARDS, R. H. T., Quantification of muscle contraction and strength. *Peripheral Neuropathy,* vol.1, ed. P. J. Dyck, P. J. Thomas, E. H. Lambert and R. Bunge. Philadelphia: W. B. Saunders, 1984.

Energy metabolism in dystrophic muscle. *Neuromuscular Diseases,* ed. G. Serratrice et al., New York: Raven Press, 1984.

The making of a clinical scientist. *Europ. J. Clin. Invest.,* 13 (1983), 279-82.

Metaboliso energitico tissutale in corso di anossia e shock. *Acta Anaesthesiologica Italica,* 35 (1984), 56-62.

Exercise physiology in horses — lessons from human physiology. *Equine Vet. J.,* 16 (1984), 154-5.

Nuclear magnetic resonance and other techniques for the study of metabolism in human muscular dystrophy. *Ital. J. Neurol. Sci. Suppl.,* 3 (1984), 75-90.

Exploratory approaches to metabolic treatment of human muscular dystrophy. *Ibid.,* 143-52.

(with Grindrod, S., Tofts, P.), Investigation of human skeletal muscle structure and composition by X-ray computerised tomography. *Eur. J. Clin. Invest.,* 13 (1983), 465-8.

EDWARDS, R. H. T., DAWSON, M. J., GRIFFITHS, J. R., WILKIE, D. R. (with Gordon, R.), Nuclear magnetic resonance spectroscopy in research and clinical diagnosis. *Europ. J. Clin. Invest.,* 13 (1983), 429-31.

EDWARDS, R. H. T., JONES, D. A., Diseases of skeletal muscle. *Handbook of Physiology: Skeletal Muscle,* ed. D. Peachey, R. H. Adrian and S. R. Geiger. Baltimore: Williams & Wilkins for the American Physiological Society, 1983.

EDWARDS, R. H. T., KHALEELI, A. A., MILLS, K. R., Muscle function in endocrine and metabolic myopathy. *Seminars in Neurology,* 3 (1983), 294-307.

EDWARDS, R. H. T., NEWHAM, D. J., JONES, D. A., CHAPMAN, S. J., Role of mechanical damage in the pathogenesis of proximal myopathy in man. *Lancet,* i (1984), 548-52.

EDWARDS, R. H. T., ROUND, J. M., JACKSON, M. J., GRIFFITHS, R. D., LILBURN, M. F., Metabolic studies of weight reduction in boys with muscular dystrophy. *Develop. Med. Child Neurol.,* 26 (1984), 384-90.

EDWARDS, R. H. T., ROUND, J. M., JONES, D. A., Needle biopsy of skeletal muscle: a review of 10 years experience. *Muscle and Nerve,* 6 (1983), 676-83.

EFTHIMIOU, J., HOLMAN, R. A. E., SOLOMAN, M. A., SPIRO, S. G. (with Belman, M.) Low frequency fatigue reduces sternomastoid endurance. *Thorax,* 29 (1984), 236.

EFTHIMIOU, J., SPIRO, S. G., Pulmonary involvement in Bechet's Syndrome. *Am. Rev. Resp. Dis.,* 129 (1984), 53A.

EXTON-SMITH, A. N., Metabolic bone disease. *Bone and Joint Disease in the Elderly,* ed. V. Wright. Edinburgh: Churchill Livingstone, 1983, 150-66.

Integration of geriatric and general medical services. *J. Am. Ger. Soc.,* 31 (1983), 810-11.

(with Stephen, J. M. L., Dattani, J.), Vitamin D status of the elderly in relation to age and exposure to sunlight. *Human Nutrition: Clinical Nutrition,* 38C (1984), 131-7.

(and others), The short-term effects of reducing elevated blood pressure in elderly patients with propanolol and dyazide. *Age and Ageing,* 13 (1984), 83-8.

FORREST, R. D., Pathogenesis and treatment of acute intermittant porphyria. *J. Roy. Soc. Med.,* 76 (1983), 800-1.

(with Gamborg-Nielson, P.), Problems in wound assessment in clinical practice. *Acta Med. Scand.,* Suppl. 688 (1984), 686-92.

FRASER, M., The treatment of depressed patients with electroconvulsive therapy. *Ger. Med. Today,* 2 (1983), 77-83.

GIBB, W. R. (and others), Chorea in digoxin toxicity. *J. Neurol. Psych.,* 47 (1984), 419.

(and others), Generalised allergic reactions to aminophylline. *Thorax,* 39 (1984), 600-3.

GRAHAM, M. I., SHAW, I. C., McLEAN, A. E. M. (and others), Decreased plasma half-life of cyclophosphamide during repeated high-dose administration. *Cancer Chemother. Pharmacol.,* 10 (1983), 192-3.

HARIKUMAR, M. K., KNIGHT, R. A., SNAITH, M. L., Abnormal T-B collaborations in systemic lupus erythematosus. *J. Cell. Biochem.,* Suppl. 8A (1984), 219.

ISENBERG, D. A., Immunoglobulin deposition in skeletal muscle in primary muscle disease. *Quart. J. Med.,* 52 (1983), 297-310.

Myositis in connective tissue disease. *Clinics in the Rheumatic Diseases,* 10 (1984), 151-74.

(with Rowe, D., Beverley, P. L. C.), Monoclonal antibodies to human leucocyte antigens in polymyositis and muscular dystrophy. *Clin. Exp. Immunol.,* 54 (1983), 327-36.

(with Shoenfeld, Y.), The rheumatologic complications of haematologic disease. *Semin. Arth. Rheumatol.,* 12 (1983), 348-58.

(and others), Idiotypic cross reactions of monoclonal human lupus auto-antibodies. *J. Exp. Med.,* 158 (1983), 668-71.

(and others), Muscle changes in ankylosing spondylitis. *Brit. J. Rheumatol.,* 22 (1983), 151-7.

(and others), Multiple serological reactions and their relationship to clinical activity in systemic lupus erythematosus: a study of 56 patients. *Arthritis Rheum.,* 27 (1984), 132-8.

(and others), An immunohistological study of secondary Sjogren's syndrome. *Ann. Rheum. Dis.,* 43 (1984), 470-6.

(and others), Binding of cytoskeletal proteins by monoclonal anti-DNA lupus auto antibodies. *Clin. Immunol. Immunopath.,* 31 (1984), 261-71.

ISENBERG, D. A., SNAITH, M. L. (and others), Systemic lupus erythematosus: 25 years of treatment related to immunopathology. *Lancet,* ii (1983), 206-10.

JACKSON, M. J., BRENTON, D. P. (with Modell, B.), Diethylene triamine pentacetic acid (DTPA) in the management of iron overload in thalassaemia. *J. Inher. Met. Dis.,* 6, Suppl. 2 (1983), 97-8.

JACKSON, M. J., JONES, D. A., EDWARDS, R. H. T., Ciba Foundation Symposium No.101. *Biology of Vitamin E,* ed. J. Whelan. London: Pitman Medical, 1983, 224-39.

Lipid peroxidation of skeletal muscle — an in vitro study. *Bioscience Reports,* 3 (1983), 609-19.

(with Swainbank, I. G., Coleman, M. L.), Zinc homeostasis in man: studies using a new stable isotope dilution technique. *Brit. J. Nut.,* 51 (1984), 199-208.

JACKSON, M. J., NEWHAM, D., EDWARDS, R. H. T. (and others), Carbonic anhydrase III in Duchenne muscular dystrophy. *Clin. Chim. Acta,* 133 (1983), 201-8.

JONES, D. A., JACKSON, M. J., McPHAIL, G., EDWARDS, R. H. T., Experimental muscle damage: the importance of external calcium. *Clin. Sci.,* 66 (1984), 317-22.

KHALEELI, A. A., BETTERIDGE, D. J., EDWARDS, R. H. T., ROUND, J. M., ROSS, E. J., Effect of treatment of Cushing's syndrome on skeletal muscle structure and function. *Clin. Endocrinol.,* 19 (1983), 547-56.

KHALEELI, A. A., EDWARDS, R. H. T., Effect of treatment on skeletal muscle dysfunction in hypothyroidism. *Clin. Sci.,* 66 (1984), 63-8.

KHALEELI, A. A., GRIFFITH, D. G., EDWARDS, R. H. T., The clinical presentation of hypothyroid myopathy and its relationship to abnormalities in structure and function of skeletal muscle. *Clin. Endocrinol.,* 19 (1983), 365-76.

KRYWAWYCH, S. (and others), Absence of hepatic molybdenum cofactor: an inborn error of metabolism leading to a combined deficiency of sulphite oxidase and xanthene dehydrogenase. *J. Inher. Metab. Dis.,* 6 (1983), 78-83.

KRYWAWYCH, S., GARROD, P., BRENTON, D. P., A possible unrecognised disease of galactose metabolism. *J. Inher. Metab. Dis.,* 6 (1983), 131-2.

LAURENCE, D. R., Sadasnjost: budncnost klinicke farmakologije. *Lijvjes,* 105 (1983), 206-9.

(with Diamond, A. L.), Compensation and drug trials: commentary. *Br. Med. J.,* 287 (1983), 676-7.

(and others), An important opportunity: an open letter to the General Medical Council. *Br. Med. J.,* 288 (1984), 1507-11.

LAURENCE, D. R., McLEAN, A. E. M., WEATHERALL, M., Editors, *Safety Testing of New Drugs: Laboratory Predictions and Clinical Performance.* London: Academic Press, 1984. 180 pp.

LINHARES, E., ROUND, J. M., JONES, D. A., EDWARDS, R. H. T., Effect of nutrition on Vitamin D status: studies in healthy and poorly nourished Brazilian children. *Am. J. Clin. Nut.,* 39 (1984), 625-30.

LOO, P. S., FELMINGHAM, D., RIDGEWAY, G. C., ORIEL, J. D., Treatment of gonococcal infections in men with single dose thiamphenicol. *Br. J. Ven. Dis.,* 59 (1983), 407.

McCARTHY, M., Are efficiency measures effective? *Health and Social Services J.,* (15 December 1983), 1500-1.

Of cats and women. *Brit. Med. J.,* 287 (1983), 445-6.

Mental health planning: a system which doesn't take sides. *Health and Social Services J.* (28 June 1984), 768.

McCARTHY, M., EVANS, C., An epidemiological contribution to planning urology services. *Hospital and Health Services Rev.,* 80 (1984), 182-4.

McDANELL, R. E., McLEAN, A. E. M. Differential induction of mixed function oxidase activity in small and large intestines and liver by diet. *Hum. Toxicol.,* 3 (1984), 68-70.
Differences between small and large intestine and liver in the inducibility of microsomal enzymes in response to stimulation by phenobarbitone and beta naphthoflavone in the diet. *Biochem. Pharmacol.,* 33 (1984), 1977-80.

MacFARLANE, A. J., A time to die? *Int. J. Epidem.,* 13 (1984), 38-44.

MacFARLANE, A. J., MUGFORD, M., *Birth Counts: Statistics of Pregnancy and Childbirth,* 2 vols. London: HMSO, 1984. 345 and 310 pp.
Using official statistics, I. *Maternity Action,* 12 (1984), 4-5.
II. *Ibid.,* 13 (1984), 4-5.
The outcome of pregnancy: what can we learn from official statistics? *Nursing Times,* 80 (1984), 42-4.

McLEAN, A. E. M., Lead versus health (book review). *Hum. Toxicol.,* 3 (1984), 68-70.

McNEIL, N. I., Differences in electrolyte handling through the human large intestine. *Intestinal Absorption and Secretion,* ed. E. Skadhanhe and K. Heintze. Lancaster: MTP Press, 1984, 111-16.
Nutritional consequences of large intestinal function in health. *Nutrition and Health,* 2 (1983), 111-14.
The contribution of the large intestine to energy supplies in man. *Am. J. Clin. Nut.,* 39 (1984), 338-42.
(with Buttoo, S., Ridgeway, G. L.), Spontaneous bacterial peritorities due to campylobarter jejuni. *Postgrad. Med. J.,* 60 (1984), 487-8.

McNEIL, N. I., LING, K. L. E., Large intestinal mucosal surface pH in rat and man. *Intestinal Absorption and Secretion,* ed. E. Skadhanhe and K. Heintze. Lancaster: MTP Press, 1984, 103-9.

McNEIL, N. I., WRONG, O. M. (with Issler, H. C., Olver, R. E.), Domestic metallic mercury poisoning. *Lancet,* i (1984), 269-71.

MILLS, K. R., EDWARDS, R. H. T., Muscle fatigue in myophosphorylase deficiency: power spectral analysis of the electromyogram. *Electroenceph. & Neurophysiol.,* 57 (1984), 330-5.

MODELL, M., BOYD, R., *Paediatric Problems in General Practice, Oxford General Practice Ser., 1.* Oxford University Press, 1982.

MODELL, M., HARDING, J. (with Horder, E. J., Williams, P. R.), Improving the care of asthmatic patients in general practice. *Brit. Med. J.,* 286 (1983), 2027-31.

NEWHAM, D. J., McPHAIL, G., MILLS, K. R., EDWARDS, R. H. T., Ultrastructural changes after concentric and eccentric contractions. *J. Neurol. Sci.,* 6 (1983), 109-1222.

NORTON, C. S., Bladder retraining. *Clinical Gynaecologic Urology,* ed. S. L. Stanton. New York: C. V. Mosby, 1984, 494-8.
Pads and mechanical methods. *Ibid.,* 499-521.
Role of the continence adviser. *Ibid.,* 517-21.
Apoteksbolaget at work. *Health and Social Services J.,* 95 (1984), 593.

ORIEL, J. D., Role of genital mycoplasmas in nongonococcal urethritis and prostatitis. *Mycoplasma hominis — a human pathogen,* ed. P. A. Mardh, B. R. Miller and W. M. McCormack, *Sex Trans. Dis.,* 10 (suppl.) (1983), 263-70.
(and others), The activity of myokamycin (MOM) against Chlamydia trachomatis and mycoplasmas *in vitro. J. Antimic. Chemotherapy,* 12 (1983), 511-14.
(and others), Natural history of cervical epithelial abnormalities in patients with vulval warts. *Br. J. Ven. Dis.,* 59 (1983), 327-9.

ORIEL, J. D., RIDGEWAY, G. L., Genital infection in men. *Brit. Med. Bull.,* 39 (1983), 133-7.

Comparison of tetracycline and minocycline in the treatment of non-gonoccal urethritis. *Br. J. Ven. Dis.,* 59 (1983), 245-8.

ORIEL, J. D., RIDGEWAY, G. L., GOLDMEIER, D., FELMINGHAM, D., Treatment of gonoccal urethritis in men with a rifampicin-erythromycin combination. *Sex. Trans. Dis.,* 9 (1983), 208-11.

OSWALD, G. A., CORCORAN, S., YUDKIN, J. S., Prevalence and risks of hyperglycaemia and undiagnosed diabetes in patients with acute myocarmial infarction. *Lancet,* i (1984), 1264-7.

OWENS, C. W. I., Guest editor. The treatment of hypertension and the prevention of stroke; a simple relationship. *International Medicine,* suppl. 7 (1984), 1-44.

PRICHARD, B. N. C., BATTERSBY, L. A., CRUICKSHANK, J. M., Overdosage with B-Adrenergic blocking agents. *Adv. Drug. React. Ac. Pois. Rev.,* 3 (1984), 91-11.

PRICHARD, B. N. C., OWENS, C. W. I., Drug treatment in hypertension. *Hypertension,* 2nd ed., ed. J. Genest, O. Kuchel, P. Hamet and M. Catin. New York: McGraw-Hill, 1983, 1171-210.

Clinical pharmacology of Beta-Adrenoceptor blocking drugs. *Beta Blockers in the Treatment of Cardiovascular Disease,* ed. J. B. Kostis and E. A. De Felice. New York: Raven Press, 1984, 1-56.

RAMPTON, D. S. (with Barton, T. P.), Are prostaglandins cytoprotective in the human large intestine? — the effect of indomethacin on rectal mucosal function and prostaglandin E_2 release in vivo. *Agents and Actions,* 14 (1984), 715-18.

RAMPTON, D. S., COHEN, S. L., LILBURN, M. F., VINCE, A. J., WAGER, J. D., WRONG, O. M. (and others), Treatment of chronic renal failure with dietary fiber. *Clin. Neph.,* 21 (1984), 159-63.

RENNIE, M. J., Leucine metabolism in skeletal muscle and whole body in normal man and patients with muscle disease. *Neuromuscular Diseases,* ed. G. Serratrice et al. New York: Raven Press, 1984, 37-44.

RENNIE, M. J., EDWARDS, R. H. T., EMERY, P. W. (and others), Depressed protein synthesis is the dominant characteristic of muscle wasting and cachexia. *Clin. Physiol.,* 3 (1983), 387-98.

ROUND, J. M. (with Clayton, B. E.), Editors, *Chemical Pathology and the Sick Child.* Oxford: Blackwell Scientific Publications, 1983. 595 pp.

ROUND, J. M., EDWARDS, R. H. T. (with Young, A., Stokes, M.), The effect of high resistance training on the strength and cross sectional area of the human quadriceps. *Eur. J. Clin. Invest.,* 113 (1983), 411-17.

SHAW, I. C. (with Mruzek, M. N.), A mass spectral study of cyclophosphamide with special reference to differences in isomeric structure. *Biomed. Mass Spectrom.,* 11 (1984), 360-6.

SHAW, I. C., EARL, L. K., McLEAN, A. E. M., SOUHAMI, R. L., Differences in the bioactivity of two commercially available preparations of cyclopophosphamide. *Human Toxicol.,* 2 (1983), 557-8.

SHAW, I. C., GRAHAM, M. I., Excretion of cyclophosphamide metabolites in bile. *Biochem. Pharmacol.,* 33 (1984), 2535-8.

SHAW, I. C., GRAHAM, M. I., McLEAN, A. E. M., 2-Chloroacetaldehyde — a metabolite of cyclophosphamide in the rat. *Cancer Treat. Revs.,* 10, Suppl.A (1983), 17-24.

2-Chloroacetaldehyde, a metabolite of cyclophosphamide in the rat. *Xenobiotica,* 13 (1983), 433-7.

SMITH, C. C. T. (and others), The nucleus basalis in Alzheimer's disease: a correlation between cell counts and cortical biochemistry and histology. *Neuropath. Appl. Neurobiol.,* 9 (1983), 175-9.

SPIRO, S. G., Lung cancer — presentation and diagnosis. *Readings in Respiratory Disorders.* Oxford: Medical Education (International), 1983, 34-7.

Lung cancer — current and future treatment. *Ibid.,* 38-41.

The diagnosis and staging of lung cancer. *Monographs in the Management of Malignant Disease: Lung Cancer,* ed. J. F. Smyth. London: Edward Arnold, 1984, 36-52.

The diagnosis and staging of lung cancer. *Recent Results in Cancer Research: Lung Cancer,* ed. W. Duncan. Berlin: Springer Verlag, 1984, 16-29.

Why stage lung cancer? *Advanced Medicine,* vol.20, ed. A. Ferguson. Bath: Pitman, 1984, 293-302.

Behandlung von Lungenkarzinomen. *Schwerpunkt Medizin,* 6 (1983), 42-51.

High dose cyclophosphamide with autologuous marrow transplantation for small cell carcinoma of the bronchus. *Cancer Chemother. Pharmacol.,* 10 (1983), 205-7.

Progress in the treatment of lung cancer. *Postgrad. Med. J.,* 60 (1984), 218-24.

(with Dhillon, P. D.), Malignant pleural effusions. *B. J. Hosp. Med.,* 29 (1983), 506-10.

(with Goldstraw, P. L.), The staging of lung cancer (editorial). *Thorax,* 39 (1984), 401-7.

(and others), Treatment of obstruction of the superior vena cava by combination chemotherapy with and without irradiation in small cell carcinoma of the bronchus. *Thorax,* 38 (1983), 501-5.

(and others), Comparison of vincristine and vindesine in the treatment of inoperable non-small cell bronchial carcinoma. *Cancer Treatment Reports,* 67 (1983), 1119-21.

(and others), Lung cancer: future prospects. *Recent Results in Cancer Research: Lung Cancer,* ed. W. Duncan. Berlin: Springer Verlag, 1984, 1182-7.

(and others), Digital vasculitis in patients with cryptogenci fibrosing alveolotis. *Brit. J. Dis. Chest,* 78 (1984), 140-8.

(and others), Sternomastoid muscle function and fatigue in normal subjects and in patients with chronic obstructive bronchitis. *Am. Rev. Resp. Dis.,* 129 (1984), 460-4.

(and others), Postmarketing surveillance: practical experience with ketotifen. *Brit. Med. J.,* 288 (1984), 911-14.

(and others), Direct labelling of Ipatropium Bromide aerosol and its deposition pattern in normal subjects and chronic bronchitics. *Thorax,* 39 (1984), 432-5.

(and others), A controlled trial of radiotherapy in small cell lung cancer treated by combination chemotherapy. *Brit. Med. J.,* 288 (1984), 1643-6.

SPIRO, S. G., EDWARDS, R. H. T. (with Wilson, S. H., Cooke, N. T.), Predicted normal values for maximal respiratory pressures in Caucasian adults and children. *Thorax,* 39 (1984), 535-8.

DE SWIET, M., Therapy for asthma in pregnancy. *Clinical Pharmacology in Obstetrics,* ed. P. J. Lewis. Bristol: John Wright. 1983, 138-43.

Anticoagulants in pregnancy. *Ibid.,* 79-87.

Drug treatment of heart disease in pregnancy. *Ibid.,* 72-8.

Heart disease in pregnancy. *Progress in Obstetrics and Gynaecology,* vol.4, ed. J. W. W. Studd. Edinburgh: Churchill Livingstone, 1984, 166-82.

Hypertension. *Antenatal and Neonatal Screening,* ed. M. de Swiet. Oxford: Blackwell Scientific Publications, 1984.

Maternal pulmonary disorders in pregnancy. *Maternal-Fetal Medicine: Principles and Practice,* ed. R. K. Creasy and R. Resnik. Philadelphia: W. B. Saunders, 1984.

The risks of antenatal subcutaneous heparin prophylaxis: a controlled trial. *Brit. J. Obstet. Gynaecol.,* 90 (1983), 1124-8.

Pregnancy after heart valve replacement. *Int. J. Cardiology,* 5 (1984), 741-3.
(with Fidler, J., Smith, V.), The excretion of oxprenolol and timolol in breast milk. *Brit. J. obstet. Gynaecol.,* 90 (1983), 961-5.
(with Fidler, J., Smith, V.), Randomised controlled comparative study of methyldopa and oxprenolol for the treatment of hypertension in pregnancy. *Brit. Med. J.,* 286 (1983), 1927-30.
(with Porter, R. J., Dewhurst, C. J.), Pregnancy in a patient with congenital adrenal hypertension. *J. Adoles. Paediat. Gynaecol.,* 1 (1983), 39-45.
(and others), Severe pre-eclampsia of early onset. *Brit. Med. J.,* 287 (1983), 130.
(and others), Cyclops abnormality associated with maternal diabetes mellitus. *J. Obstet. & Gynaecol.,* 3 (1983), 179-80.
(and others), Prolonged heparin therapy in pregnancy causes bone demineralisation (heparin-induced osteopaenia). *Brit. J. Obstet. Gynaecol.,* 90 (1983), 1129-34.

TOMLINSON, B., BHATTACHARJEE, P., GRAHAM, B. R., HILL, M. M., RAEBURN, J., PRICHARD, B. N. C., A comparison of penbutolol with atenolol and long-acting propranolol. *Br. J. Clin. Pharmacol.,* 17 (1984), 186-7P.

WILKIE, D. R., The control of glycolysis in living muscle studied by nuclear magnetic resonance and other techniques. *Biochem. Soc. Trans.,* 2 (1983), 244-6.

WILKIE, D. R., DAWSON, M. J., EDWARDS, R. H. T. (with Gordon, R. E., Shaw, D.), ^{31}P NMR studies of resting muscle in normal human subjects. *Contractile Mechanisms in Muscle. Advances in Experimental Medicine and Biology,* ed. G. H. Pollack and H. Sugi. New York: Plenum Press, 1984, 333-48.

WILKIE, D. R., GRIFFITHS, J. R., CADY, E., EDWARDS, R. H. T., McREADY, V. R., WILTSHAW, E., ^{31}P NMR studies of a human tumour in situ. *Lancet,* i (1983), 1435-6.

WISEMAN, S. M. (and others), Use of an alcolmeter to detect problem drinkers. *Brit. Med. J.,* 285 (1983), 1089-90.

WITTS, D., ARNOLD, K. G., EXTON-SMITH, A. N., The plasma levels of chlormethiazole and two of its metabolites in elderly subjects after single and multiple dosing. *J. Pharm. Biomed. Anal.,* 1 (1983), 331-40.

WRONG, O. M., VINCE, A., Urea and ammonia metabolism in the human large intestine. *Proc. Nut. Soc.,* 43 (1984), 77-86.

YUDKIN, J. S., Use and misuse of drugs in the Third World. *Advanced Medicine, vol.19,* ed. K. B. Saunders. London: Pitman Medical, 1983, 122-35.
(with Upunda, G., Brown, G. V.), *Guidelines for Drug Usage.* London: Macmillan, 1984. 236 pp.
(and others), An important opportunity: an open letter to the General Medical Council. *Brit. Med. J.,* i (1984), 1507-11.

MENTAL HEALTH

BARKER, C., The psychotherapist. *The Study of Real Skills,* vol.4, ed. W. T. Singleton. MTP Press, 1983.

BARKER, C., LEMLE, R., The helping process in couples. *Am. J. Comm. Psychol.,* 12 (1984), 321-36.

BLOOMFIELD, I., The process of supervision, transference and counter-transference. *First Steps in Psychotherapy* (German ed.), ed. W. Brautigam, W. Knauss and H. H. Wolff. Heidelberg: Springer, 1983, 62-8. (ch.2.7.)
Difficulties and anxieties at start and end of therapy and supervision. *Ibid.,* 68-75. (ch.2.8.)

Michael Balint — a personal experience of a Balint seminar. *Ibid.,* 172-83. (ch.4.)
The changing face of group analysis. *Group Analysis,* XVI/I (1983), 81-2.
Stereotypes in pastoral counselling. *Hospital Chaplain,* 85 (1983), 5-12.
Organisations and their effect on personal growth. *Contact,* 1 (1984), 2-9.
BURGNER, M., The Oedipal experience: effects on development of an absent father. *Brit. Psychoanalyt. Soc. Bull.,* No.10 (1983), 2-20.
COGILL, S. (with Lindsay, D.), Psychological services for children: grass roots opinion. *Brit. J. Psychol. Soc.,* 36 (1983), 155-8.
DALTON, K., *Premenstrual Syndrome & Progesterone Therapy* (2nd revised ed.). London: Heinemann Medical Books, 1984.
FRASER, M., The treatment of depressed elderly patients with electroconvulsive therapy. *Geriatric Medicine Today,* 2 (1983), 77-83.
GREENBERG, M., Hysterectomy and depression. *Psychosomatic Medicine: Theoretical, Clinical, & Transcultural Aspects,* vol.27, ed. A. J. Krakowski and Chase P. Kimball. New York: Plenum Press, 1983, 227-33.
The meaning of menorrhagia: an investigation into the association between the complaint of menorrhagia and depression. *J. Psychosom. Res.,* 27 (1983), 209-17.
HOLMES, J. A., Psychoanalysis and family therapy: Freud's Dora Case reconsidered. *J. Family Therapy,* 5 (1983), 235-51.
PISTRANG, N., Women's work involvement and experience of new motherhood. *J. Marriage & the Family,* 46 (1984).
SHAPIRO, M. B., Self-reported feelings in clinical depression: an analysis of published data. *Brit. J. Med. Psychol.,* 56 (1983), 211-23.
Review of *Emotions in the Human Face. Brit. J. Psychiat.,* 143 (1983), 315-16.
SHOENBERG, P. J., Comments: an experience of ulcerative colitis. *Brit. J. Psychiat.,* 143 (1983), 517-18.
STURGEON, D. A., Medical education in England at the present time. *First Steps in Psychotherapy* (German ed.), ed. W. Brautigam, W. Knauss and H. H. Wolff. Heidelberg: Springer, 1983, 19-24. (ch.2.1.)
Medical student psychotherapy under supervision. *Ibid.,* 31-5. (ch.2.3.)
Problems and difficulties with the scheme in London. *Ibid.,* 50-6. (ch.2.5.)
Similarities and differences in student psychotherapy in London and Heidelberg. *Ibid.,* 56-62. (ch.2.6.)
The relationship between auditory hallucinations and spontaneous fluctuations of skin conductance in schizophrenia. *Brit. J. Psychiat.,* 142 (1983), 47-53.
Characteristics of expressed emotion: its relationship to speech and looking in schizophrenic patients and their relatives. *Brit. J. Clin. Psychol.,* 22 (1983), 257-64.
Life events, relatives expressed emotion and maintenance neuroleptics in schizophrenic relapse. *Psychol. Med.,* 13 (1983), 799-806.
Psychophysiological responses of schizophrenic patients to high and low expressed emotion relatives: a follow-up study. *Brit. J. Psychiat.,* 144 (1984), 62-9.
Psychosocial relevance and benefit of neuroleptic maintenance: experience in the UK. *J. Clin. Psychiat.,* 45 (1984), 43-9.
TYLDEN, E., Drug addiction in young women. *The Young Woman — Psychosomatic Aspects of Obstetrics & Gynaecology,* ed. Lorraine Dennerstein and Myriam de Senarclens. Excerpta Medica, 1983. (ch.5.)
WOLFF, H. H., Theoretical concepts. *First Steps in Psychotherapy* (German ed.), ed. W. Brautigam, W. Knauss and H. H. Wolff. Heidelberg: Springer, 1983. (ch.1.)
The place of psychotherapy and dynamic understanding in medicine. *Ibid.,* 1-3. (ch.1.1.)
Teaching basic psychotherapeutic and psychodynamic concepts. *Ibid.,* 4-18. (ch.1.2.)

BARNES, R. D., POTTINGER, B. E. (and others), Dissimilarity between three sublines of CBA. *Mouse Newsletter,* 85 (1983), 64.

FAIRWEATHER, D. V. I., Problems of health manpower development in obstetrics. *Proc. Xth World Congr. Gynecology and Obstetrics, San Francisco, 1982,* ed. M. Newton. London/Mexico City/New York/Tokyo: Academic Professional Information Services Inc., 1983, 69-75.

'Roundtable'. The practice of obstetrics and gynaecology around the world. *The Female Patient,* 8 (2) (1983), 18-32.

(with Vessey, M. P., Norman-Smith, B.), Adverse effects of stilboestrol treatment in pregnancy on mothers and offspring. *J. Obstet. Gynaecol.,* 3 (suppl. 2), (1983), S55-7.

(with Vessey, M. P., Norman-Smith, B., Buckley, J.), A randomized double-blind controlled trial of the value of stilboestrol therapy in pregnancy: long-term follow-up of mothers and their offspring. *Br. J. Obstet. Gynaecol.,* 90 (1983), 1007-17.

HISLOP, A. (with Fewell, J. E., Kitterman, J. A., Johnson, P.), Effect of tracheostomy on lung development in fetal lambs. *J. Appl. Physiol.,* 55 (1983), 1103-8.

HISLOP, A., FAIRWEATHER, D. V. I. (with Howard, S.), Morphometric studies on the structural development of the lung in Macaca fascicularis during fetal and postnatal life. *J. Anat.,* 138 (1984), 95-112.

HOOKER, J. G., WARD, R. H. T. (and others), Is maternal alpha-fetoprotein screening still of value in a low-risk area for neural tube defects? *Prenat. Diagn.,* 4 (1984), 29-33.

KATZ, M., Hormone treatment of menstrual disturbances. *J. Obstet. Gynaecol.,* 3 (suppl. 1), (1982), S17-20.

KAUFMAN, L., Editor, *Anaesthesia Review,* 2. Edinburgh, London, Melbourne and New York: Churchill Livingstone, 1983. 228 pp.

Reflections on spinal analgesia: 2. Pain relief. *Br. J. Parenteral Therapy,* 4 (1983), 14-24.

Anaesthesia for large bowel surgery: a review. *J. R. Soc. Med.,* 76 (1983), 693-6.

LACHELIN, G. C. L., The polycystic ovary syndrome. *Progress in Obstetrics and Gynaecology,* ed. J. Studd. Edinburgh, London, Melbourne and New York: Churchill Livingstone, 1984, 290-301.

LACHELIN, G. C. L., McGARRIGLE, H. H. G., Comparison of saliva, plasma unconjugated and plasma total oestriol levels in pregnancy. *Proc. 31st Ann. Mtg Soc. Gynaecological Investigation* Abstract No. 191 (March 1984) 112.

MILLS, A. M., Anticoagulants in pregnancy. *Mims Magazine* (15 October 1983), 61-4.

An assessment of pre-operative microbiological screening (including C. trachomatis) on the prevention of post abortion pelvic inflammatory disease. *23rd Brit. Congr. Obstetrics and Gynaecology, 1983.*

Therapeutic abortion and chlamydial infection. *Br. Med. J.,* 286 (1983), 1649. (Letter.)

Community menopausal clinics correspondence points. *Ibid.,* 287 (1983), 692. (Letter.)

An assessment of pre-operative microbial screening on the prevention of post-abortion pelvic inflammatory disease. *Br. J. Obstet. Gynaecol.,* 91 (1984), 182-6.

(with Kerslake, S., Beeks, M., Rao, U.), An assessment of cervical cytology as a means of diagnosing vaginal yeasts and trichomoniasis. *Br. J. Sex. Med.,* 10, No. 98 (1983), 27.

MODELL, B., *Report of a WHO Working Group on Fetal Diagnosis of Hereditary Diseases.* HMG/WG/32.2, 1983.

MODELL, B. (with Berdoukas, V.), *The Clinical Approach to Thalassaemia.* London and New York: Grune and Stratton, 1984. 453 pp.

MODELL, B., PETROU, M., Management of thalassaemia major. *Arch. Dis. Child.,* 58, No. 12 (1983), 1026-30.

MORGAN, H., Caesarean section under epidural analgesia. *Br.J. Hosp. Med.* (September 1983), 179-83.

MORGAN, H., PAREDES, R. A., LACHELIN, G. C. L., Severe ovarian hyperstimulation after clomiphene citrate in a hypothyroid patient. Case report. *Br. J. Obstet. Gynaecol.,* 90 (1983), 977-82.

PAREDES, R. A., MORGAN, H., LACHELIN, G. C. L., Congenital heart block associated with maternal primary Sjogren's syndrome. Case report. *Br. J. Obstet. Gynaecol.,* 90 (1983), 870-1.

PETROU, M., MODELL, B. (with Old, J. M., Weatherall, D. J.), Feasibility of antenatal diagnosis of β thalassaemia by DNA polymorphisms in Asian Indian and Cypriot populations. *Br. J. Haematol.,* 57 (1984), 255-63.

(and others), Population and genetic studies suggest a single origin for the Indian deletion of β thalassaemia. *Br. J. Haematol.,* 57 (1984), 271-8.

PETROU, M., WARD, R. H. T., MODELL, B., KARAGOZLU, F. (and others), Obstetric outcome in first trimester fetal diagnosis for the haemoglobinopathies. *Lancet,* ii (1983), 1252.

READER, F., Is obstetrics and gynaecology a specialty in jeopardy? *Br. Med. J.,* 288 (1984), 1762-3. (Letter.)

(with Savage, W.), *Coping with Caesarean and Other Difficult Births.* Edinburgh: Macdonald's, 1983.

(with Savage, W.), Sexual activity during pregnancy: giving advice. *Br. J. Sex. Med.,* 103 (1983), 23-7.

(with Savage, W., Durrant, R.), Sexual intercourse during pregnancy and fetal distress. *Br. J. Sex. Med.,* 101 (1983), 21-4.

STEWART, A. L., Severe perinatal hazards. *Developmental Psychiatry,* ed. M. Rutter. New York: Guildford Press, 1983, 15 (ch.1.)

(with Thorburn, R. J., Lipscomb, A. P., Amiel-Tison, C.), Neonatal neurologic examinations of very preterm infants: comparison of results with ultrasound diagnosis of periventricular haemorrhage. *Am. J. Perinatol.,* 1 (1983), 6-11.

(and others), Ultrasound appearance of the brain in very preterm infants and neurodevelopmental outcome at 18 months of age. *Arch. Dis. Child.,* 58 (1983), 598-604.

(and others), Diagnosis by ultrasound of intracranial lesions in preterm infants and prediction of neurodevelopmental outcome *(VIII Europ. Congr. Perinatal Medicine). Eur. J. Obstet. Gynecol. Reprod. Biol.,* 15 (1983), 336-9.

(and others), Early treatment for rapidly progressive post-haemorrhagic hydrocephalus. *Lancet,* i (1983), 1438-9. (Letter.)

(and others), Prediction of neurodevelopmental status at 18 months of age by ultrasound and neurological examination. *Pediatr. Res.,* 18 (1984), 95.

(and others), Ultrasound appearance of the brain in very preterm infants and neurodevelopmental outcome at 18 months of age. *Pediatr. Res.,* 18 (1984), 95.

WARD, H., Chorionic villi sampling — its promise and its problems. *Contemporary Obstetrics and Gynaecology* (October 1983), 31.

WARD, R. H. T., Midtrimester fetoscopy — fetal blood sampling. *Progress in Perinatal Medicine,* ed. A. A. P. Bertini and D. F. Crosignani. Amsterdam: Exerpta Medica, 1983, 213.

First trimester chorionic villus sampling. Pre-natal diagnosis. *Proc. 11th Study Group Roy. Coll. Obst. & Gyn.,* (1983), 99.

WARD, R. H. T., MODELL, B., PETROU, M., Ante-natal diagnosis of β-Thalassaemia. *Br. J. Haematol.,* 54 (1983), 660. (Letter.)

COSTELLO, A. M. de L., HOPE, P. L., REYNOLDS, E. O. R. (and others), Surface coil NMR spectroscopy of brain. *The Lancet,* 1 (1984), 459.

(and others), Cerebral energy metabolism following birth asphyxia studied by phosphorus nuclear magnetic resonance spectroscopy. *Biology of the Neonate,* 45, (1984) 152-3.

LIPSCOMB, A. P., THORBURN, R. J., STEWART, A. L., REYNOLDS, E. O. R., HOPE, P. L., Early treatment for rapidly progressive post-haemorrhagic hydrocephalus. *The Lancet,* i (1983), 1438-9.

MILLIGAN, D. W. A., ISSLER, H., REYNOLDS, E. O. R. (with Massam, M.), Treatment of neonatal pulmonary interstitial emphysema by lung puncture. *The Lancet,* i (1984), 1010-11.

OLVER, R. E., RAMSDEN, C. A., Control of lung liquid absorption and surfactant release at birth. *Respiratory Distress Syndrome,* ed. K. Raivio. London: Academic Press, 1984, 112-20.

OLVER, R. E., ROBINSON, E. J., Na^+ and $C1^-$ transport by tracheal epithelium of fetal and adult sheep in vitro: effects of isoprenaline and amiloride. *J. Physiol.,* 343 (1983), 80-1P.

OLVER, R. E., RAMSDEN, C. A., STRANG, L. B., WALTERS, D. V. (with Brown, M. J.), Effects of adrenaline and of spontaneous labour on the secretion and absorption of lung liquid in the fetal lamb. *J. Physiol.,* 344 (1983), 137-52.

PETROU, M., MODELL, B. (with Old, J. M., Weatherall, D. J.), Feasibility of antenatal diagnosis of β thalassaemia by DNA polymorphisms in Asian Indian and Cypriot populations. *Br. J. Haemat.,* 57 (1984), 255-63.

(and others), Obstetric outcome in first trimester fetal diagnosis for the haemoglobinopathies. *The Lancet,* ii (1983), 1251.

(and others), Population and genetic studies suggest a single origin for the Indian deletion B^0 thalassaemia. *Br. J. Haemat.,* 57 (1984), 271-8.

REYNOLDS, E. O. R., Neonatal intensive care and handicap. *Neonatal Intensive Care: a Dilemma of Resources and Needs.* London: Spastics Society, 1984, 27-8.

SHAW, J. C. L. (with Rees, L., Brook, C. G. D., Forsling, M. L.), Hyponatraemia in the first week of life in preterm infants. Pt I. Arginine vasopressin section. *Arch. Dis. Child.,* 59 (1984), 414-22.

(with Rees, L., Brook, C. G. D., Forsling, M. L.), Pt II. Sodium and water balance. *Archs Dis. Childh.,* 59 (1984), 423-9.

SMELLIE, J. M., Urinary tract infections in childhood. *Medicine in Practice,* 2 (1984), 20-8.

(with Dillon, M.), Peripheral plasma renin activity, hypertension and renal scarring in children. *Reflux Nephropathy,* ed. C. J. Hodson. Basle: Karger, 1984, 34-5.

(with Preece, M. A., Paton, A. M.), Normal somatic growth in children receiving low-dose prophylactic co-trimoxazole. *Eur. J. Paediatr.,* 140 (1983), 301-4.

(with Preece, M. A., Paton, A. M.), Somatic growth in girls receiving low-dose prophylactic co-trimoxazole (Short report). *Br. med. J.,* 287 (1983), 875.

(with Preece, M. A., Paton, A. M.), Normal somatic growth in children receiving low-dose prophylactic co-trimoxazole. *Eur. J. Paediatr.,* 140 (1983), 162.

STEWART, A. L., Severe perinatal hazards. *Developmental Psychiatry,* ed. M. Rutter. New York: Guilford Press, 1983, 15. (ch.I.)

STEWART, A. L., THORBURN, R. J., HOPE, P. L., COSTELLO, A. M. DE L., GOLDSMITH, M., SWAIN, P., REYNOLDS, E. O. R., Ultrasound appearance of the brain in very preterm infants and neurodevelopmental outcome at 18 months of age. *Paediatr. Res.,* 18 (1984), 95.

Predication of neurodevelopmental status at eighteen months of age by ultrasound and neurological examination. *Paediatr. Res.,* 18 (1984), 95A.
Ultrasound appearance of the brain in very preterm infants and neurodevelopmental outcome at 18 months of age. *Ibid.*

STEWART, A. L., THORBURN, R. J., HOPE, P. L., GOLDSMITH, M., LIPSCOMB, A. P., REYNOLDS, E. O. R., Ultrasound appearance of the brain in very preterm infants and neurodevelopmental outcome at 18 months of age. *Archs Dis. Childh.* 58, (1983) 598-604.

STEWART, A. L., THORBURN, R. J., LIPSCOMB, A. P. (with Amiel-Tison, C.), Neonatal neurologic examinations of very preterm infants: comparison of results with ultrasound diagnosis of periventricular haemorrhage. *Am. J. Perinatal.,* 1 (1983), 6-11.

THORBURN, R. J., STEWART, A. L., HOPE, P. L., GOLDSMITH, M., REYNOLDS, E. O. R., LIPSCOMB, A. P., Diagnosis by ultrasound of intracranial lesions in preterm infants and prediction of neurodevelopmental outcome *(VIIIth Europ. Congr. Perinatal Medicine), Eur. J. Obstet. Gynaec. and Repr. Biol.,* 15 (1983), 336-9.

WALTERS, D. V., OLVER, R. E., The role of B adrenergic agents in the control of lung liquid absorption and surfactant release. *Pulmonary Surfactant System. Symp. Giovanni Lorensini Foundation* Vol. 16, ed. E. V. Cosmi and E. M. Scarpelli. Amsterdam, New York, Oxford: Elsevier, 1983, 111-21.

SURGERY

ARAUJO, J. G. C., HARRISON, R. A., BARTON, T., LEWIN, M. R., CLARK, C. G., The protective effect of dietary protein in bypass induced liver disease: an experimental study. *Gut,* 24 (1983), 985.

ATHOW, A. C., SEWERNIAK, A., BARTON, T., LEWIN, M. R., CLARK, C. G., Modified sham feeding: an alternative to the insulin test. *Gut,* 24 (1983), 1001.

BOULOS, P. B., The influence of the method of internal sphincterotomy for chronic anal fissure and time after sphincterotomy on the reduction in anal canal pressure. *Eur. Surg. Res.,* 16 (1984), 19.
(with Stryker, S. J., Nicholls, R. J.), The long-term results of polyvinyl alcohol (Ivalon) sponge for rectal prolapse in young patients. *Brit. J. Surg.,* 71 (1984), 213-14.
(with Whitfield, P. F., Hobsley, M.), Insulin- and histamine-stimulated secretion in relation to recurrence of duodenal ulceration after vagotomy. *Brit. J. Surg.,* 71 (1984), 418-22.

BOULOS, P. B., ARAUJO, J. G. C., Adequate internal sphincterotomy for chronic anal fissure: subcutaneous or open technique. *Brit. J. Surg.,* 71 (1984), 360-2.

BOULOS, P. B., KARAMANOLIS, D. G., SALMON, P. R., CLARK, C. G., Is colonoscopy necessary in diverticular disease? *Lancet,* 1 (1984), 95-6.
La coloscopie est-elle necessaire dans la diverticulose colique? *Le Journal Internationale de Medicine,* 9 (1984), 30-2.
A rapid bowel preparation without colonic washout for colonoscopy. *Coloproctology,* 6 (1984), 158-60.

BOWN, S. G., Phototherapy of tumours. *World J. Surg.,* 7 (1983), 700-9.
The internal surgeons without a knife — the laser and the endoscope. *Proc. Roy. Inst. Gt. Brit.,* 55 (1983), 177-97.
Tumour therapy with the Nd YAG laser. *Nd. YAG Laser in Medicine and Surgery,* ed. S. Joffee. New York: Elsevier, 1983.
The use of lasers in medicine. *Int. Med.,* 4 (1984), 31-3.

BOWN, S. G., SWAIN, C. P., SALMON, P. R. (and others), Histological changes following laser photocoagulation of canine gastric mucosa. *Gut,* 24 (1983), 914-20.

CLARK, C. G., Commentary on *Gastroesophageal Reflux Disease* by Arvey I. Rovers, & J. Cohen. *Current Concepts in Gastroenterology,* 1, No. 3 (1983), 2.

Commentary on *Dyspepsia: its source and current therapy reviewed* by Walter M. Roufail. *Current Concepts in Gastroenterology,* 2, No.1 (1984), 10.

Commentary on *A Prospective Evaluation of Serum Carcinoembryonic Antigen (CEA) Levels in the Management of Colorectal Cancer* by John Boey and others. *World J. Surg.,* 8 (1984), 286.

Commentary on *Results of a Prospective Randomised Double-Blind Trial of Aprotinin in Colonic Surgery* by Howard L. Young and Malcolm H. Wheeler. *World J. Surg.,* 8 (1984), 372.

CLARK, C. G., KARAMANOLIS, D., WARD, M. W. N., Preference for proximal gastric vagotomy combined with cholecystectomy. *Brit. J. Surg.,* 70 (1983), 185-7.

DANZI, M., LEWIN, M. R., CLARK, C. G. (with Cruse, J. P.), Combination chemotherapy with 5-fluorouracil (5FU) and 1,3-bis (2-chloro-ethyl)-1-nitrosourea (BCNU) prolongs survival of rats with dimethylhydrazine-induced colon cancer. *Gut,* 24 (1983), 1041-7.

GILBERT, J. M., Distribution of metastases at necropsy in colorectal cancer. *Clinical & Experimental Metastases,* 1 (1983), 97-101.

(with Jeffrey, I., Evans, M., Kark, A. E.), Sites of recurrent tumour after 'curative' colorectal surgery: implications for adjuvant therapy. *Brit. J. Surg.,* 71 (1984), 203-5.

(with Thompson, E. M., Slavin, G., Kark, A. E.), Chemotherapy of chemically-induced colerectal tumours. *J. Roy. Soc. Med.,* 76 (1983), 467-72.

HARRISON, R. A., CLARK, C. G., Weight reducing operations. *Surgery,* vol.3. *Gastroenterological Surgery,* ed. Miles Irving and Robert W. Beart Jr. London: Butterworths International Medical Reviews, 1983, 261-76.

JAYARAJ, A. P., Dissecting aneurysm of aorta in rats fed with cysteamine. *Br. J. Exp. Path.,* 64 (1983), 548-52.

JAYARAJ, A. P., TOVEY, F. I., CLARK, C. G., Relationship of mast cell degranulation and vascular changes in the stomach of rats. *Gut,* 24 (1983), 480.

Histological demonstration of vagal innervation of whole stomach. *Gut,* 25 (1984), 566.

(with Morrissey, S. M.), Histochemical changes in mucus in duodenal ulceration. *Gut,* 24 (1983), 909-13.

KAUFMAN, L., Reflections on spinal analgesia. 2. Pain relief. *Brit. J. Parenteral Therapy,* 4 (1983), 14-24.

Anaesthesia for large bowel surgery: a review. *J. Roy. Soc. Med.,* 76 (1983), 693-6.

Editor, *Anaesthesia Review,* vol.2. London: Churchill Livingstone, 1983. 228 pp.

SALMON, P. R., Introduction — the use of lasers in current surgical practice. *World J. Surg.,* 7 (1983), 6.

SWAIN, C. P., Photocoagulation of alimentary haemorrhage. *World J. Surg.,* 7 (1983), 6.

SWAIN, C. P., BOWN, S. G., EDWARDS, D. A. W., SALMON, P. R., Neoplastic gastric outflow tract obstruction relieved by Argon laser at endoscopy. *Gastrointest. Endosc.,* 30 (1984), 31-2.

SWAIN, C. P., BOWN, S. G., EDWARDS, D. A. W., SALMON, P. R., CLARK, C. G. (with Kirkham, J. S.), Laser recanalisation of obstructing foregut cancer. *Br. J. Surg.,* 71 (1984), 112.

SWAIN, C. P., BOWN, S. G., SALMON, P. R. (with Kirkham, J. S., Northfield, T. C.), Controlled trial of Nd YAG laster photocoagulation in bleeding peptic ulcers. *Gut,* 24 (1983), 967.

SWAIN, C. P., DARK, JULIA M., LEWIN, M. R., BOWN, S. G. (and others), Comparative study of the safety and efficacy of liquid and dry monopolar electrocoagulation in experimental canine bleeding ulcers using computerised energy monitoring. *Gastroenterology,* 86 (1984), 93-103.

SWAIN, C. P., DARK, JULIA M., SALMON, P. R. (with Mills, T. N., Northfield, T. C.), Endoscopic colostomy, gastrostomy and anastomosis. *Gut,* 24 (1983), 1004.

(and others), Stresses of vomiting. A study of the pathophysiology of the Mallory Weiss tear. *Gut,* 24 (1983), 987.

(and others), Controlled trial of Nd YAG laser photocoagulation in bleeding peptic ulcers. *Gastrointest. Endosc.,* 30 (1984), 137.

TAYLOR, L. A., JAYARAJ, A. P., CLARK, C. G., Is chronic detergent injestion harmful to the gut? *Brit. J. Indust. Med.,* 40 (1984), 279-81.

WARD, M. W. N., HARRISON, R. A., CLARK, C. G. (and others), The effect of enteral nutritional support on skeletal muscle protein synthesis and whole-body protein turnover in fasted surgical patients. *Hum. Nutrit: Clin. Nutrit.,* 37C (1983), 435-58.

WATSON, G. M., BOWN, S. G., SWAIN, C. P., SALMON, P. R. (with Wickham, J. E., Mills, T. N.), Laser fragmentation of renal calculi. *Br. J. Urol.,* 55 (1983), 613-16.

COMPUTER CENTRE

DAY, A. C., *Text Processing.* Cambridge University Press, 1984. 140 pp.

SAMET, P. A., Twenty-five years of university computing. *Computer Bull.,* ser.II, 38 (1983), 16-20.

THE LIBRARY

GOVE, SUSAN, Anatomy and physiology. *Information Sources in the Medical Sciences,* ed. L. T. Morton and S. Godbolt. London: Butterworths, 1984, 120-41.

MARTIN, IAN, The publications of Robert Browning. *Maistor: Classical, Byzantine and Renaissance Studies for Robert Browning,* ed. Ann Moffatt. Canberra, Australian Association for Byzantine Studies, 1984, 1-23.

PERCIVAL, JANET, *A Guide to Archives and Manuscripts in the University of London,* vol. 1. London: University of London Library Resources Co-ordinating Committee, 1984. 219 pp.

SOAR, GEOFFREY (with Ellis, R. J.), Little magazines in the British Isles today. *British Book News* (December 1983), 728-33.

TEARLE, BARBARA (Wells, Barbara), Editor, *Index to Legal Essays: English Language Legal Essays in Festschriften, Memorial Volumes, Conference Papers and other Collections, 1975-1979;* compiled for the British and Irish Association of Law Librarians. London: Mansell, 1983. xii + 430 pp.

East-West trade recent legislative reform: a selected bibliography. *Legislative Reform and East-West Trade,* ed. W. E. Butler. Dobbs Ferry, N.Y.: Condyne/Oceana, 1984, 1-16.

J. A. C. Thomas (published writings) 1948-1982. *Studies in Justinian's Institutes in memory of J. A. C. Thomas,* ed. P. G. Stein and A. D. E. Lewis. London: Sweet & Maxwell, 1983, 187-97.

APPENDIX I

NUMBERS OF STUDENTS 1983-84*

	Under-graduate		*Post-graduate*		*Total*	
Faculty of Arts	1,326	(32)	364	(164)	1,690	(196)
Department of Political Economy	303	(2)	17	(5)	320	(7)
Slade School of Fine Art	100	(0)	93	(1)	193	(1)
	1,729	(34)	474	(170)	2,203	(204)
Faculty of Science	1,590	(4)	†593	(139)	2,183	(143)
Faculty of Medical Sciences‡	314	(1)	0	(0)	314	(1)
Faculty of Engineering	506	(0)	261	(78)	767	(78)
Faculty of Laws	300	(11)	156	(57)	456	(68)
Faculty of Environmental Studies	146	(0)	265	(59)	411	(59)
Faculty of Clinical Sciences	483	(1)	48	(32)	531	(33)
	5,068	(51)	§1,797	(535)	6,865	(586)

* As at 31 December 1983.

† This figure includes 96 full-time and 35 part-time students working in the College Faculty of Medical Sciences who were registered in the University Faculty of Science.

‡ Non-clinical Medical and Dental students only (excluding Intercalated BSc students. These are all included in Science).

§ Of this number 1,023 full-time students and 486 part-time students were registered for higher degrees of the University of London; the remainder were working for higher diplomas of the University or of the College, or for the higher degrees of other universities, or were engaged in research work, or attending postgraduate lecture courses.

The figures in brackets indicate the number of part-time students included in the total under each head.

APPENDIX II

UNIVERSITY FIRST DEGREE AND DIPLOMA AWARDS

1 OCTOBER 1983 — 30 SEPTEMBER 1984

FACULTY OF ARTS

BA Degree	*1st Class Honours*	*2nd Class Honours Upper Div.*	*2nd Class Honours Lower Div.*	*3rd Class Honours*	*Pass*	*Total*
Ancient World	2	2	5	—	—	9
Anthropology & Geography	—	2	3	1	—	6
Classics	1	7	4	—	—	12
Classics & Ancient History	—	1	1	—	—	2
Dutch	—	—	1	—	—	1
English	2	18	27	8	—	55
Fine Art	1	10	9	3	—	22
French	6	12	14	—	—	31
Geography	3	19	23	—	—	45
German	4	5	10	—	—	19
Hebrew	—	—	1	—	—	1
History	8	30	21	1	—	60
History of Art	1	8	10	2	—	21
Italian	—	5	1	—	1	7
Latin	—	—	—	1	—	1
Linguistics	—	1	9	2	—	12
Medieval Archaeology	1	3	4	1	—	9
Modern Iberian & Latin American Regional Studies	—	7	3	—	—	10
Philosophy	1	16	13	1	—	31
Scandinavian Studies	—	4	8	—	1	13
Spanish with French	1	—	3	—	—	4
Ancient History & Egyptology	—	1	3	—	—	4
Ancient History & Social Anthropology	—	1	1	—	—	2
Anthropology & Linguistics	—	—	1	—	—	1
English & German	—	2	2	—	—	4
English & History of Art	—	1	3	1	—	5
French & History of Art	—	2	2	—	—	4
French & Philosophy	—	3	1	—	—	4
German & History of Art	—	2	—	—	—	2
German & Linguistics	—	1	—	—	—	1
German & Scandinavian Studies	—	3	1	—	—	4
History & History of Art	—	2	—	—	—	2
Italian & History of Art	—	1	1	—	—	2
Philosophy & Economics	—	1	1	—	—	2
	31	170	186	21	2	410

	Pass	*Total*
BA Degree (Aegrotat)	1	1

FACULTY OF LAWS

LLB Degree	1st Class Honours	2nd Class Honours Upper Div.	2nd Class Honours Lower Div.	3rd Class Honours	Pass	Total
	8	41	36	—	1	86

FACULTY OF MEDICINE

Basic Medical Sciences and Pharmacology Examination: 129 students passed.
Second Examination for Dental Degrees: 52 students passed.
MB, BS Degrees: 94 students passed, including 4 with distinctions.
BDS Degree: 47 students passed, including 4 with honours.

FACULTY OF SCIENCE

BSc Degree	1st Class Honours	2nd Class Honours Upper Div.	2nd Class Honours Lower Div.	3rd Class Honours	Pass	Total
Anthropology	1	14	11	2	—	28
Anthropology & Geography	—	1	—	—	—	1
Applied Physics	2	1	5	10	—	18
Architecture, Planning, Building and Environmental Studies	6	17	12	7	—	42
Astronomy	2	—	1	5	—	8
Astronomy & Physics	3	5	2	7	1	18
Biochemistry	2	7	5	1	1	16
Biology	—	—	3	1	—	4
Botany	—	2	—	—	1	3
Chemistry	4	8	10	5	—	27
Chemical Physics	—	3	2	—	—	5
Computer Science	2	7	3	2	—	14
Computer Science with Electronic Engineering	1	1	1	1	—	4
Exploration Geophysics	—	—	1	1	—	2
Genetics	—	3	3	—	—	6
Genetics & Microbiology	1	4	1	—	—	6
Geography	1	13	19	2	—	35
Geology	—	10	12	2	—	24
Human Sciences	2	4	5	1	—	12
Mathematics	2	4	11	9	1	27
Mathematics & Astronomy	—	2	—	—	—	2
Mathematics & Physics	2	3	1	—	—	6
Medicinal Chemistry	2	2	3	1	—	8
Microbiology	2	7	3	3	—	15
Pharmacology	1	8	—	—	—	9
Physics	6	5	5	3	1	20
Physiology	2	4	3	1	—	10
Psychology	2	17	25	5	—	49
Speech Sciences	1	15	27	2	1	46
Statistics	—	—	3	3	—	6
Statistics & Computer Science	—	2	1	1	—	4
Statistics, Computing, Operational Research and Economics	—	3	1	1	—	5
Zoology	1	6	6	—	—	13
	48	178	185	76	6	493

BSc (Intercalated) Degree	1st Class Honours	2nd Class Honours Upper Div.	2nd Class Honours Lower Div.	3rd Class Honours	Pass	Total
Anatomy with Basic Medical Sciences	1	2	—	—	—	3
Anthropology & Basic Medical Sciences	—	1	—	—	—	1
Biomedical Sciences	2	12	2	1	—	17
History of Medicine and Basic Medical Sciences	—	1	—	—	—	1
Pharmacology with Basic Medical Sciences	2	9	—	—	—	11
Physiology with Basic Medical Sciences	3	1	—	—	—	4
Psychology & Basic Medical Sciences	—	9	2	—	—	11
Zoology & Basic Medical Sciences	—	1	—	—	—	1
	8	36	4	1	—	49

FACULTY OF ENGINEERING

BSc (Engineering) Degree	1st Class Honours	2nd Class Honours Upper Div.	2nd Class Honours Lower Div.	3rd Class Honours	Pass	Total
Biochemical Engineering	—	4	2	2	—	8
Chemical Engineering	6	9	6	7	1	29
Civil Engineering	5	8	12	10	5	40
Electronic & Electrical Engineering	3	13	6	7	2	31
Electronic Engineering with Computer Science	1	4	2	1	1	9
Mechanical Engineering	3	1	7	5	9	25
Naval Architecture	—	—	3	3	1	7
	18	39	38	35	19	149

FACULTY OF ECONOMICS

BSc (Economics) Degree	1st Class Honours	2nd Class Honours Upper Div.	2nd Class Honours Lower Div.	3rd Class Honours	Pass	Total
Economics	2	28	27	10	4	71
Economics & Economic History	—	4	5	3	—	12
Economics & Geography	—	5	5	1	—	11
Economics & Statistics	1	2	1	1	—	5
	3	39	38	15	4	99

APPENDIX III

UNIVERSITY HIGHER DEGREE AND HIGHER DIPLOMA AWARDS

1 OCTOBER 1983 — 30 SEPTEMBER 1984

FACULTY OF ARTS

PhD *Egyptology:* Lisa L. Giddy. *English Language and Literature:* Peter J. Conradi, Christine Bold, Andrew P. Goatly, Bilha Melman. *Slade School of Fine Art:* Jill E. Dimmock. *French Language and Literature:* Frederick H. Davies, Glenys E. Law, John M. Lewis, Angeliki Olympiou, Elizabeth Mc D. Reid. *History:* Alan Argent, Dennis M. Linehan, Thomas P. Schofield, David R. Schweitzer, Alejandro Soto, Caroline H. Williamson. *History of Art:* Catherine D. Harding. *Italian:* John D. Knox. *School of Library, Archive and Information Studies:* Marianne F. Tidcombe. *Philosophy:* Alan T. Brown, Peter A. C. Goldsbury, Andrew J. Newman. *Phonetics and Linguistics:* Rose Morris. (24)

MPhil *Bartlett School of Architecture and Planning:* Julian P. Bowrey, Chan Kit-Yue, Frances E. A. Down, Brian A. Ham, Thelma M. F. Hardie, Robert L. G. Harris, Ho Kah Kui, Michael C. T. Ma, Ngai Sik-Keung, Lawrence O. Omoja, George P. Smith, Jeremy H. Williams. *English Language and Literature:* Nicholas R. de Jongh. *Philosophy:* Christopher D. I. Bertram, Chow Pak-Kiu, Timothy J. Walton. (16)

MA *Archaeology:* Julian McL. Hill, Jennifer S. F. Power, Mary J. Simon, Anthony Tynan. *Archive Studies:* Nicholas J. Baldwin, John J. Hazell, Alison Kenney*, Elaine E. McDowell, Samuel Njovana, Patricia M. Sewell. *Area Studies:* Andrew W. Atkins, Niamh L. Burns, Judith L. Pattison, Odile-Simone-Jeanine Pierrot, George K. Thorogood, Jorge H. Valero Briceno. *Classics:* Thalia Hadjikyriacou, Avgi-Anna Maggel, Louis F. Van Ryneveld*, Janet T. M. Vernon*. *English Literature and Language Before 1525:* Helena J. Johnston, Jolanta Uhlar. *German:* Nicholas W. Nesbitt-Larking. *Library and Information Studies:* Mirghani A. Abdel Hafeez, Said M. Al-Asaad, Um-Hani A-W. R. Al-Khan, Thelma J. Barratt, Dolores M. Bee, Fiona A. Blackburn, Edmund Cabutey-Adodoadji, Bernadette S. Carney, Jinja Choung, Gail A. Downe, Genevieve A. Dyer, Judith A. Edwards, Christine R. English, Titus A. Eyitayo, Mary E. A. Goldmann, Naomi Grahame, Nicholas Hadgraft, Kevin Harrison, Yvonne Hibbott, Deborah K. Hodder, Hon Mi-Yin, Yuen M. E. Ho-Tsui, Jacqueline J. Ireland, Christine M. Jones, Patricia J. Latham, Kathryn A. Lowe, Ronald R. Milne, Caroline Mitchell, Caroline B. Moughton, Mary C. Murphy, Andrew D. Parker, Susan C. Parr, Nalini Persad, Ortrun Peyn, David L. Powell, Amal K. Qilingi, Bernadette Sacco, Carol Stevens, Maria A. Teles Di Machado, Marion J. L. Wilks, Margery J. Winspear. *Linguistics:* Lesley J. Cummings, Theresa Kouroukli, Liu Tanru, Kingsley K. T. Mensah, Sten Vikner*, Xiong Xin, Maria Zeri. *Phonetics:* Nadia Djennane, Hiroko Eiju, Kimitaka Hara, Susan J. Sharp, Titilayo O. Ufomata. *Scandinavian Studies:* Helen C. Carron, Elizabeth M. Hayes, Jennifer M. Stark. (79)

University Postgraduate Diplomas: Fine Art: 38, Linguistics: 4

*Awarded Mark of Distinction

FACULTY OF ECONOMICS

PhD *Political Economy:* Jose Ferreira Irmao, Donald L. P. Lee, Bijoy Raychaudhuri, Panayotis-Zafiris Tzannatos. (4)

MPhil *Laws:* Lamia Y. Saffoury. (1)

MSc *Economics:* Margaret Akello-Oliso, Raffaele Ersonmez, Ana C. F. Da. S. De. A. Galvao, Abraham Habte-Sellassie, Firoozeh Mohseni, Vivian C. Onwubalili, Nicholas Papageorgiou, Pezounoula Patriotou, David M. Tyler Jr. *Urban Development Planning:* Musari O. Ajayi, Celmira R. Araneda Salazar, Naz-Pari Azarm, Henry G. Barrios Martinez, William R. Bloxom*, Emmanuel M. Byaruhanga, Cheen L. M. Chin, Hassan B. B. Hamzah, Lam Kar Keong, Judith E. Marsie-Hazen, Maria V. Marzal Sanchez, Gordon T. Mwesigye, Michael T. N. Njoroge, Gamal G. Nkrumah, Joachim A. C. Okafor, Babatunde I. Okuboyejo, Chizoma A. Onuoha, Christopher I. Rose†, Rodolfo G. Santos, Mario L. Segall, Ruengsak Suthakavatin, Gumbo A. Touray, Leda M. Vieira Machado, Roslan Zaris. (33)

FACULTY OF LAWS

PhD *Laws:* Ali S. Fadlalla, Antonios Makridimitris. (2)

LLM Evripidis Abadjis, Lateph A. Adeniji, Zulkefli B. Ahmad Makinudin, Motoko Aizawa, Sakeus Akweenda, Benjamin Andoh, Marie-Elisabeth Andrae, Christodoulos Bafas, Jennifer C. Bough, Stephen Byrom, Shane C. Carew, Kok K. Chan, Chan Kwong Ming, Chanda H. J. Chileshe, Peter M. Chronis, Stephen J. Collier, Michael B. Cuthbert, Michael Dalakos, Markos Darras, Aida Economou*, Robin A. English, Ioannis Fassolis, Gavin S. Fennell, John M. Gerstz, Ha Yiu Fai, Thomas Harrison, Kevin Haven, Williette A. Henries, Cheng-Tsung Huang, Laura Jacknick, Elli Kalitsunaki, Niaz A. Khawaja, John Korovilas, Vassilios Kotsovilis, Olutoyin A. Ladele, Ka-Wai S. Lau, Olufemi D. Lijadu, James K. Lockett, Paul V. McDade*, Vera G. McEwen, Margreet D. Maijer, Maria Malachtou, Kanisan Mariappan Packirisamy, Ross C. Marland, Emiliani E. M. Mushi, Thrasos Nadiotis, Helen-Elpis Nassopoulou, Abu S. B. Nordin, Catherine A. Novelli, Ijeoma E. Nwakamma-Okoro, Panikkos Onoufriou, Bibiana N. Onyekwelu, Michael F. Ottley, Maria Papanicolaou, Leonidas Parparinos, Mayur Patel, Stephen W. Payne, David Pearl, Gregory Pelecanos, Jacobus P. Pretorius, Shahid Rashid, Bruno P. Rimola, Rahel Rimon, Anthony K. Rose, Anthony T. St John, Stylianos M. Stylianides, Tan Tee Jim, Alexandra Tataya, Melani Theodorou, Patty A. Udondem, Emmanuel Vassilakakis, Vassilios Vrochidis, Robert J. Wadsworth. (73)

University Postgraduate Diplomas: International Law: 5, Shipping Law: 9

*Awarded Mark of Distinction
†Awarded 1982-83 but not included in the Annual Report for that year

PhD *Anatomy and Embryology:* Deborah Dwork, Susan G. Griffith, Judith M. Hills, Christopher J. Lawrence, Parviz Meghji, Catherine J. Moody. *Anthropology:* Stephen K. Dreyer, Lisette Josephides, Peter G. Wood, Kenneth R. Young. *Bartlett School of Architecture and Planning:* Linda M. Clarke, Naresh K. Garg, Fatma A. Khafagy, Michael Meyer-Brodnitz, Jean Peponis. *Biochemistry:* Ann Cornish, Susan M. Dunn, Kay E. Foster, Timothy P. Goldstone, Daniel D. Kalderon, Christine A. Orengo, Ravigadevi Sambanthamurthi, Christopher J. Taylorson, Basil-Stelios Tselentis, Richard A. Vallance. *Biophysics:* Neela K. Kotecha, Samuel Lee. *Botany and Microbiology:* Julian R. Bonnerjea, Jayran Dabbaghian, Jonathan D. Graves, Robert H. Hall, Anis Jafari, Robert A. Jewell, Andrew J. Newbold. *Chemistry:* Irmtraud E. Ackermann, Amal M. Al-Saffar, Leslie A. Chewter, Malcolm D. Cook, Thomas J. Grey, Robert A. Jackson, Kathleen A. Johnson, Mohamedally Kurmoo, Glen V. Lewis, Elahe Rafii-Tabar, Marie-Claude Richoux, Garry Rumbles, Victor M. Rumjanek, Jeremy Sellors, Martha E. Sosa-Torres, Martin J. Stead, Leonard S. Toczylkin, John P. M. Trusler, Jane A. Warner, Margaret J. Westby, Taher I. Yousaf. *Clinical Sciences:* Christopher M. Egan, Susan J. Mayor, Rosalind V A. Reeve. *Computer Science:* Stephen W. Edge, Zonghou Ma. *Genetics and Biometry:* Sarah P. Ball, Jeremy R. Clough, Paul J. P. Travers, Alan G. Tunnacliffe. *Geography:* Sylvia H. Chant, Christopher M. Devereux, Harold A. McClure, Alan C. McKinnon, Patrick D. Nunn, Katherine A. Oliver. *Geology:* Richard A. Benmore, Michael F. Billett, Nicholas G. Fuller, David Read, S. Sadegh Shakib. *Pharmacology:* Stephen J. Bailey, Rachel A. Coats, Nigel S. Cook, Ifeamalume C. Ezeamuzie. *Physics and Astronomy:* Steven Adams, Neil J. Baker, Keith A. Clarke, James E. Conboy, Christopher F. England, Enise N. Ercan, Terence J. Fountain, Horace H. S. Ip, Andrew Jackson, Christopher R. J. Kilburn, Michael A. Parker, David J. Rodgers, Jeffery Settle, Mark F. Smith, Alan M. Wood. *Physiology:* Ian Parker, Helen M. Parsons. *Psychology:* Anthony J. Attwood, Adrian C. Davis, Ilsa Echegaray, Servulo A. Figueira, Janet L. Jacobs, Ida Lichtig. *Zoology and Comparative Anatomy:* Deborah J. Allen, Gregory J. Bancroft, Peter H. Cleat, Mary K. L. Collins, Ian N. Crispe, David H. Davies, Nicholas R. J. Gascoigne, Christopher R. Harlow, Diane Kermack. Christine Kinnon, Nicholas B. La Thangue, Christopher D. Myers, Jack Price, Alain R. M. Townsend.

(115)

MPhil *Anatomy and Embryology:* Barbara S. Pittam. *Clinical Sciences:* Peter A. Fraser. *Geography:* Sarah Buchanan. *Pharmacology:* Marcus C. Allen. *Zoology and Comparative Anatomy:* Scott P. Neeley. (5)

MSc *Applied Molecular Biology and Biotechnology:* Nigel G. Halford, June T. O. Johnson, Lesley-Anne P. Kerr, Gillian E. May, Keith T. Miller, Philip B. Nathan, Cyrus A. Parvis, Keith J. Smith, Vernon M. Spencer*, Jonathan M. Thoday, Thomas C. H-S. Tsang*. *Architecture:* Abu H. B. Abu Bakar, Ramzi M. A. Al-Hariri, Helen Antanasiotis, Andrew R. Atkinson, Andrew I. C. Black, Constantine Calafatis, Anthony J. Clelford, Colin S. Davies, Obiesie P. Ezeanochie, Murray Fraser*, Keith W. Green, David J. Gregory Hung Chong, Mercy T. Iyortyer, Constantinos Karamalis, Apostolos Karelis, Justin R. Keen, Maurice R. Kluge,

Evangelos Krassoulis, Nicholas A. Lee Evans, Dixon K. Louie, Denis McNamara, Awsam A. J. Matloob, Richard F. Moore, Andrew S. Morgan, Billie B. T. Mosetlhi, Stephen J. Nicholas, Lora Nicolaou, Maria L. G. Da R. Oiticica, Dimitris Papakonstantinou, Alan R. Penn*, Stephen J. Rettig, Raymundo A. Reyes Vicite, Katherine Stavraki, Evangelia Stefanidou, Agathocles A. Stylianou, Theodora Tonti, Kwok T. Wu, Nerces A. Yerissian. *Biochemical Engineering:* Charles W. Renner*†, Luigi Tranchino†, Gladys F. Valero†. *Biochemistry:* Arun K. Rishi. *Biological Anthropology:* Robert A. Barton*, John S. Ellett III, Edrys M. Lupprian. *Computer Science:* Michael J. Aiken, Nicholas P. Alfano, David J. Badrick, Jovan Barac, Paul G. Blundell, Denis H. Brink, Peter A. Evans*, David R. Getling, Jane Hall, Michael A. Hooper, Charles P. W. Hornsby, Aydin Huseyin, Koon Kam Hang, Richard J. Marsh, David R. Osborne, June M. Power, Rouzbeh Sabour Djannati, Brian Z. Sacks, Hooi Him Saw, Martin P. Schultz, Caron Sethill, Colin D. Taylor, Marcus D. Whitfield*, Zeeba Zaidi. *Conservation:* Judith D. Cook, Alexandra M. Dixon, Clare M. Harpur, Urs Hintermann, Augustine J. Ibanga, David A. Kirk, Richard W. S. Knightsbridge*, Barry N. Phillips, Douglas J. Wright. *Educational Psychology:* Christopher F. Allward, Michelle E. Blake, Carolyn S. Cooper, Edith E. Hui Kam Ping, Frances A. James, Elisabeth Powell, Alison F. Scott-Baumann, Anthony K. Tarrant, Jacqueline E. Thompson, Margaret A. Tunbridge. *General and Medical Microbiology:* Jamal N. Belgrave, Geetashreea Gosh, Patricia G. Kirton, Caroline J. Pull, Angelika E. Raftopoulos, Jane A. H. Thomson*. *History and Philosophy of Science:* David J. Blow, Rahil N. Butt, Rosamund M. Philips. *Hydrogeology:* Zulfiqar Ahmad, Ishaya M. Aku, Sotirios Beloukas, David A. Brackett, Abdelbagi A. Gohrashi, Madhu S. R. Hada, Martin L. Jackson, Adel K. S. Magaref, David J. Morgan, Hudson H. Nkotagu, Pius C. Nwabugwu, Belinda K. Price, David Shaw, Kurukulasuriya P. L. E. Silva, Philip M. Slater. *Marine Geology and Geophysics:* Robert Gilmour, Andrew W. Hill, Raymond M. McClenaghan, Penelope A. Milner, Maurice Neville, Christopher H. J. Pearse, John D. Roper, William J. Whyte. *Micropalaeontology:* Andrew R. Godfrey, Michael J. Haskett, Peter J. Lunt, Stavros Moutzourides, Denise M. O'Brien, Karen S. Philpott, Elspeth Urquhart, Catherine M. D. Watkins. *Neurological Science:* Mark Hero-Preziosi. *Physiology:* Andree E. Allen, Oketa O. Julu, Jonathan O. H. Williams, Tewabech Zewde. *Social Anthropology:* Linda M. Hitchcox, Elizabeth Kreimer Cantor, Irene E. Kyffin, Italo Pardo. *Statistics:* Rajni Jain, Peter B. Musgrove, Peter J. Sanderson, Michael R. Thomson, Derek Thrumble*, William J. Redfearn. *Vertebrate Palaeontology:* Ferdinand O. Anuforo, Michael J. Simmons, Graham D. Watts. (158)

*Awarded Mark of Distinction
†Awarded 1982-83 but not included in the Annual Report for that year

DSc John G. Yates. (1)

PhD *Chemical and Biochemical Engineering:* Guillermo F. Barreto, Ian K. Brookes, Nigel Devereux, Alex C. Hoffmann, Edward D. A. Obeng, Barbara L. Talboys. *Civil and Municipal Engineering:* Mohamed T. Al-Safi, Ronald B. J. Casson, Brian R. Ellis, Farhad Geoola, Ramin Ghaffari, Benjamin G. Heydecker, Maarten A. Koenders, Richard J. Stuart. *Electronic and Electrical Engineering:* Seddigheh Ameri Deh Abadi, Luciano M. Diaz, Kok S. Fong, Frank Grunfeld, Mahbubul Hoque, Phivos Malamis, Valentin O. Roda. *Mechanical Engineering:* David J. Andrews, David T. Brown, Frank D. W. Charlesworth, Somasundaram Dharmavasan, Kevin R. Drake. (26)

MPhil *Electronic and Electrical Engineering:* Nisabha D. Jayasundere, Wong Chan Sau-Wah. (2)

MSc *Biochemical Engineering:* Philip A. Adepoju†, Philip A. Aldridge†, Richard S. Billington†, Geoffrey A. Hills†, Robert C. Imrie*†, Lydia H. C. McElroy†, Helen M. Nixseaman†, Daniel I. Onwuasoanya†, Michael J. Pinhorn†, Jose M. Sevilla Kram†, Lesley A. Smyth†, Elizabeth A. Walker†. *Marine Engineering:* Vassilios Andreopoulos*, Michael C. Austwick, Robert Bastow, Christos Bersos, Terence C. Butler, Ian A. Christie, Christopher J. Courtaux, Nicholas L. Grimes, Lorentzos Halkoussis, Robert Huntley, Andreas Lambrou, George Leoutsakos, Karl R. Luck, George Papaioannou, Stephen K. Rutledge, Nicholas Tsitsilianos, Ernestospyridon Tzannatos, Richard R. West*, Arthur R. Wilson. *Microwaves and Modern Optics:* Nor H. Ahmad Nasarudin, David M. Boylan, Syeda R. Begum, Joao C. P. Bida, Michael P. Clifton, Stephen R. Fairweather, John M. Halley, Mohamad M. Hilal†, Michael P. Hook, Deborah M. Littman Moses Murengezi, Olayinka Oyenuga, Anthony P. J. Pinto. *Naval Architecture:* Vernon Archibald, Harold J. Armstrong, Derek W. Davis, Martin J. Ellis*, Xavier-Louis Guyot, Hon Ming Tung, Richard B. Houseman, Emeraku Ijioma, David M. Keegan, Geir Kilhus*, Christopher J. Millman, Satish Srinivasan. *Ocean Engineering:* Alfred S. Jesudasen, Augustine B. Ndum, Francis Palmer, Duncan P. Peace, Stephen W. Vorley. *Photogrammetry:* Martin F. Bolt, Anne M. Burbidge, Nicholas T. Fickling, David J. Gugan. *Surveying:* Issa A. Hemed, Julia A. Hopwood, Timothy R. Sharp, Abdullahi Yusuf Shereef. (69)

*Awarded with Distinction
†Awarded 1982-83 but not included in the Annual Report for that year

MD	Linda T. C. Ho.	(1)
MDS	Stanley F. Parkin.	(1)
PhD	*Clinical Sciences:* Seda H. Boghossian, John C. Easton, Henry A. F. Stephens. *Zoology and Comparative Anatomy:* Agamemnon A. Epenetos.	(4)
MSc	*Periodontology:* Lim Lum Peng*†, Fidelia Tay Bee Kiong†, Fehmida R. Wadiwalla†. *Prosthetic Dentistry:* Kalsom B. Ismail, Yiannos Poyiadjis†, Nahid A. Zainu-Al-Abiddin.	(6)

*Awarded with Distinction
†Awarded in 1982-83 but not included in the Annual Report for that year

APPENDIX IV

COLLEGE DIPLOMA AND CERTIFICATE AWARDS

1 OCTOBER 1983 — 30 SEPTEMBER 1984

FACULTY OF ARTS

Diploma in Archive Studies: Andrew John Bauer Mussell*, Kevin Brown, Ian Thornton Day, Beatrice Wangari Githaka, Peter Matthew Housego, Clive Hughes, Mohd Jamin Lebai Din, Sarah Jane Lewin*, Katherine Anne Maisey*, Kevin James Mulley, Mark Enock Winya Ncube, Marion Ann Neal, Eileen Mary Power, Elaine Jean Tutt, Nicholas Philip Webb*, Allyson Whyte. (16)

Diploma in Economics: Peter Todd Bruss, Koichi Ikegami†. (2)

Diploma in Library and Information Studies: James Ogawi Kur Ajing, Amanda Jane Akester, Penelope Bailey, Veronica Carmen Benjamin, Babacar Camara, Michael William Chambers*, Caroline Anne Clifford, Hedy Cohen, Andrew Edward Cormack, Susan Dawes, Carmel Mary Egan, Deborah Anne Ford*, Ruth Anne Forder, Judith Anne Fox, Nicola French, Anne Margaret George, Julie Gibson, Moira Alison Goff, Frances Anne Hall, Colin Raymond Mark Hewson, Trevor Jamison, Anne Christine Kelly, Elmelinda J. Lara, Magdalen Bing Sum Lau, Helen Anne Lishman, Helen Fay Lister, Flossie Matenje, Deborah Jane Helen Matthews, Veronique Milot, Verna Ann Mitchell, Janice Ann Modeste, Rose-Ann Movsovic, Lucyanna Yee Lan Moy Hing, Gillian Sara Murrell, Fiona Jean Nesbitt, Erika Panagakis, Paul Pelowski, Clare Caroline Angell Powne*, Rachel Mary Priestman, Musarrat Rana, Fehmida Roomi, Davina Louise Russell, Shirley Colleen Sacks, Sarah Elizabeth Shield, Steven William Simmonite, Lawrence Bartlam Smith, Panicos Stylianou, Lesley Sarah Trenner, Katherine Van de Vate, Holly Anne Wainwright, Anthony John Wells. (50)

Certificate of Proficiency in Phonetics: Neil Atkinson, Attah Ollah Badii, Birgit Benkhoff, Myriam Amparo Bernal Campos, Guy William Davidson Cook, Sarah Elizabeth Cunningham, Elizabeth Anne Crocker, Peter Benedict Damian-Grint, Nadia Djennane, Stephen Leonard Gilbey, Lafta Salman Hussain, Namiko Iwabuchi, Anne Grethe Mathisen, Frances McDonald, Helen Nowalinski-Coveney, Judith Margaret Pope, Marie-Claude Regnier, Elsa Rodriguez, Maria Luzmila Sagastegui, Matthew Erasmus John Screech, Titilayo Olufunmilola Ufomata, Iris Elisabeth Warnkes, Catherine Grant Weir, Kelvin Gustav Zane. (24)

*Awarded with Distinction
†Awarded in 1982-83 but not included in Annual Report for that year

FACULTY OF SCIENCE

Diploma in Conservation: Judith Diane Cook, Alexandra Mary Dixon, Clare Muriel Harpur, Urs Hintermann, Augustine Jimmy Ibanga, David Anthony Kirk, Richard William Spicer Knightbridge*, Barry Nigel Phillips, Douglas James Wright. (9)

Diploma in General and Medical Microbiology: Jamal Narayan Belgrave, Geetashree Ghosh, Patricia Geraldine Kirton, Caroline Jane Pull, Angelika Eleftheria Raftopoulos, Jane Amaryllis Hextal Thomson*. (6)

Diploma in Hydrogeology: Zulfiqar Ahmad, Ishaya Mark Aku, David Alan Brackett, Abdelbagi Abdelrahman Gohrashi, Madhu Sudan Raj Hada, Martin Leo Jackson, Adel Kaid Saeed Magaref, David Jonathan Morgan, Hudson Hamisi Nkotagu, Belinda Kathryn Price, David Shaw, Kurukulasuriya Patabendige Lakshman Eric Silva, Philip Michael Slater. (13)

Diploma in Micropalaeontology: Andrew Ralph Godfrey, Michael John Haskett, Peter William Paul Hooper, Elizabeth Mary Kentish, Peter Justin Lunt, Alison Mary Merker, Ali Mostofi, Stavros Moutzourides, Denis Marie O'Brien, Kester Iredia Okpiabhele, Keren Wendy Owers, Simon Nicholas Jonathan Payne, Karen Suzanne Philpott, Hilary Janet Stowe, Elspeth Urquhart, Catherine Marina Denise Watkins, Jeremy Rupert Young. (17)

Diploma in Statistics: Antony Chimonides. (1)

*Awarded with Distinction

FACULTY OF ENGINEERING

Diploma in Biochemical Engineering: Philip Adeleke Adepoju, Philip Arthur Aldridge, Richard Stephen Billington, Geoffrey Alan Hills, Robert Clark Imrie*, Lydia Helen Christine McElroy, Helen Mary Nixseaman, Daniel Izuchukwu Onwuasoanya, Michael John Pinhorn, Charles William Renner*, Jose Maximiliano Sevilla Kram, Lesley Anne Smyth, Luigi Tranchino, Gladys Francisca Valero, Elizabeth Anne Walker. (15)

Diploma in Chemical Engineering: Costas Constantinides, Roger Peter Crook, Mataa Mundia Mukelebai, Norman Raymond Scaife*, Martin Peter Spragg, Christopher Stevens. (6)

Diploma in Marine Engineering: Vassilios Andreopoulos*, Michael Christopher Austwick, Robert Bastow, Christos Bersos, Terence Clive Butler, Ian Anthony Christie, Christopher John Courtaux, Nicholas Lawrence Grimes, Lorentzos Halkoussis, Robert Huntley, Andreas Lambrou, George Leoutsakos, Karl Raymond Luck, George Papaioannou, Peter Petrides, Stephen Keith Rutledge, Nicholas Tsitsilianos, Ernestospyridon Tzannatos, Richard Ralph West*, Arthur Robert Wilson. (20)

Diploma in Microwave Engineering: Nor Hafizah Ahmad Nasarudin, Syeda Rasheda Begum, Joao Claudio Pereira Bida, David Michael Boylan, Michael Peter Clifton, Thierry Degot, Stephen Richard Fairweather, George John Frankou, David Leslie Fudge, John Maxwell Halley, Mohamad Mouaffaq Hilal, Michael Paul Hook, Christopher Michael Kaniou, Deborah Mary Littman, Moses Murengezi, Olayinka Oyenuga, Anthony Philip Jude Pinto, Frederic Denis Joseph Separi. (18)

Diploma in Naval Architecture: Vernon Archibald, Harold James Armstrong, Derek William Davis, Martin John Ellis*, Xavier-Louis Guyot, Hon Ming Tung, Richard Bruce Houseman, Emeraku Ijioma, David Michael Keegan, Geir Kilhus*, Christopher James Millman, Satish Srinivasan. (12)

Diploma in Numerical Methods in Photogrammetry and Surveying: Ahmed Mohmed Ibrahim, Anthony John Pilkington, Peter Stanicenko. (3)

Diploma in Ocean Engineering: Alfred Sandeep Jesudasen, Augustine Broh Ndum, Francis Palmer, Duncan Peter Peace, Stephen William Vorley. (5)

Diploma in Photogrammetry: Alexander Stewart Buchanan, Andrew Robin Kilbride, Koo Tsai Kee*, Nicos Roussos*, Anant Hemraj Shah. (5)

Diploma in Surveying: John Vincent Arthur, Baburam Bhattarai, Gareth Davies, Christine Linda Hudson, Michael Peter Nottage, Richard Timothy Quinson-West, Timothy Philip Sellens, Matthew John Smith, Stephen Marshall Wright. (9)

*Awarded with Distinction

FACULTY OF ENVIRONMENTAL STUDIES

Diploma in Architecture: Almaz Salma Abdul Rahim, Dominique Andrews, Elizabeth Jane Ashmore, Mark Andrew Balkham, Jeremy Richard Belcher, Wanda Jadwiga Krystyna, Car, Alison Jean Clark, Janet Marion D'Auvergne Collings, Richard Marcus Cutler, Richard Gavin Doone, Richard St John Mark Free, Virginia Mary Goldstone, Jane Patricia Gosnell, David John Gregory, Stephen Robert Hill, Peter Drake Jarman, Christopher Kin Chung Law, Stephen William Gordon MacBean, Peter David Marshall, Duncan Piers Hutton Mitchell, David Graham Pace, Nigel David Perryer, Jonathan Roger Pile, Hugo Anthonie Roell, John Nigel Silver, Frances Kathleen Smart, John Francis Smith, Martin Summersgill, Paul Anthony Sweeney, Andrea Julie Taylor, Susan Elizabeth Venner, Benedict Newell Wallbank, James Benjamin Wells, Sarah Williams, Paul Zara, Roman Andrzej Jerzy Zdziarski. (36)

Certificate in Development Planning: Muthalif Ahmed, Nayef Omar Alkalali, Chunkuay Chen, Bimal Chandra Datta, Radhe Shyam Gattani, Albert Kweku Hammond, Pang-Juan Han, Babajo Ibrahim, Md. Ali Imam, Mohammed Aminu, Gabriel Leonard Kippa, Muhammed Mohammed Lawal, Fong Tzer Lin, Ching Shan Liu, Arvind Madan Mahajan, Pablo Francisco Mardones-Kruger, Bashir Bakori Mohammed, Bhaskaran Nair, Victoria Owusua Ofori, Edi Pireno, Bimal Krishna Ray, Victor Manuel Romero Mares, Chatar Singh Saini, Abu Bakr Md Siddique, Elly Sinaga, Naresh Nath Tankha, Ashalatha Thampuran, Uton Rustan Harun Uton, Julie Viloria, Gen Shyang Wang, Tzer-Yuen Wu, David Yabakyak Yashim. (32)

Diploma in Development Planning: Juliana Francesca Awuko, Jagdish Chander Chopra, Barbara Nkongho Ekiko, David Ndiritu Gichohi, Christopher Kioko Mbithi, Sani Aminu Mohammed, Uzoma Romanus Nwakaeze, Romanus Ugochukwu Onyekwere, Thanu Srichoo, Patricia Anne Hyacinth Stephens, Kaktehene Abasiene Uno. (11)

Pre-Diploma Certificate in Architecture: Dominique Andrews†, Nathalie Anne Bagnoud, Mark Andrew Balkham†, Alistair Philip Brierley, Timothy John Brittain-Catlin, Alison Jean Clark†, Richard Gavin Doone†, Nicola Jane Edmonds, James Peter Greenwood, Christopher Kenneth William Griffiths, Stephen Robert Hill†, Christopher Simon Honey, Mahboob Khan, Kurt-Wolfgang Kuchler, Christopher Kin Chung Law†, Jennifer Ming-Yen Lee, Stephen William Gordon MacBean†, Paul Andrew Nicholson, Nigel David Perryer†, Jonathan Roger Pile†, John Nigel Silver†, Frances Kathleen Smart†, Jenifer Mary Smith, Andrea Julie Taylor†, Ivan Tsao, Benedict Newell Wallbank, Zailani Bin Bonandar. (27)

†Awarded in 1982-83 but not included in Annual Report for that year

APPENDIX V

SCHOLARSHIPS, STUDENTSHIPS AND PRIZES COLLEGE AND UNIVERSITY AWARDS

COLLEGE AWARDS

Eleanor Allen Prize (Political Economy)—P. J. Tickle.
Atchison Scholarships (Clinical Sciences)—W. A. Nowlan.
Atchison Exhibitions (Clinical Sciences)—S. J. Boniface.
Barlow Prize (Electronic and Electrical Engineering)—F. C. De-Medeiros Filho.
Sir Herbert Henry Bartlett Scholarships (Architecture)—Susan Venner, R. S. Webb.
Herbert Batsford Prize (Architecture)—S. J. Lee.
Thomas Witherden Batt Scholarships (Science)—Deborah Christie, E. Harrison, K. Hilyer, H. V. A. Law, C. Prince, I. Thorpe, P. Waggett.
Leonard Bayliss Memorial Prize (Physiology)—K. Swann.
Bayliss-Starling Memorial Scholarships (Physiology)—Uma Shahani, T. Meyer.
Francis Perch Bedford Prize (Zoology)—A. A. Hyman.
Ada Heather Bigg Prize (Political Economy)—Julie Cabburn.
Boise Scholarships (Fine Art)—Sandra Buckett, A. Cole, G. P. Curson, Diana De Courcy, N. S. Fredman, P. D. Fried, Charlotte J. Hodes, N. Jeffries, Bernadette Kerr, R. J. Lawrence, R. S. J. Lloyd, Elizabeth Magill, J. T. Norris, Anna P. Vaughan, J. Wigley.
Bonney Prize (Geology)—C. W. Chatelier, T. J. Ireland.
R. E. Bradbury Memorial Prize (Anthropology)—Susannah Darlington, F. S. Dams.
Broderick-Parry Prize (Geography)—W. P. Wisden.
'Building' Prizes (Architecture)—A. Boyce, M. Almond.
Rodney Burn Prize (Fine Art)—H. Kondracki.
Margaret Elizabeth Dale Cast Prize (History)—Rachel Babb, C. Darling.
Chadwick Certificate and Prize (Civil Engineering)—D. R. G. Cottam.
Churchill-Jenkinson Prize (Archive Studies)—N. P. Webb.
Antonio Cippico Medal and Prize (Italian)—Kathryn M. A. Murry.
Lillian Clarke Prize (Botany and Microbiology)—Gillian Charles.
Clinton Prize (Electrical Engineering)—M. Burrows.
Croxon Memorial Scholarships (Clinical Sciences)—Betty Law, A. Massoud, A. Olaitan, S. H. Tiny, N. Joon.
Dawes Hicks Postgraduate Scholarship (Philosophy)—S. Evnine.
Deans Scholarships (Architecture)—Ke Xiao Ming.
Donaldson Medal (Architecture)—G. Boscherini.
Dunn and Wilson Award (Library and Information Studies)—Marianne F. Tidcombe.
Early English Text Society's Prize—R. Shooter.
Elliot-Blake Studentships—Deborah Christie.
Environmental Design Prize—J. Alexander.
Esso Chemical Travelling Scholarship (Chemical Engineering)—A. T. Hodson.
Douglas and Anne Feltham Scholarships (Clinical Sciences)—J. T. Gillow, N. Wainwright.
Ferriere Scholarships (Clinical Sciences)—B. Law, H. Chiang.
Filliter Elective Period Award (Clinical Sciences)—A. Barnett, P. Seal.
Richard Fitzgerald Prize (Engineering)—Angela J. Brazier.
Flemming Elective Period Awards (Clinical Sciences)—N. Brown, R. Hawkins, A. Mair, G. Turner, G. J. Clifford, D. J. Johnstone, B. Sweeton-Smith.

Sir Banister Fletcher Prize and Medal (Architecture)—D. P. Mitchell.
Flinders Petrie Scholarship in Egyptian Archaeology—S-E-E. M. A. M. Abd-el-Kader.
Daryll Forde Award (Anthropology)—V. Scarborough.
Irene Frowen Prize (German)—R. Gorner.
Goldsmid Elective Period Awards (Clinical Sciences)—M. Aquilina, K. Clark, O. Dent, M. Pike, M. Reid, C. Wilson, E. Kemp, C. R. Pal, S. Rees, J. C. Smith, P. Haji-Michael, P. Walters.
Edith Goodyear Prize (Geology)—P. D. Ballantyne.
Eva Grunwald Memorial Prize (French)—D. Wynn-Simmonds.
Paul Hass Studentship (Biochemistry)—R. Bayney.
Violet Hall Prize (French)—S. L. Gilbey, Rachel N. Dawson.
Halley Prize (Astronomy)—K. C. Smith.
Hart Prize (Photogrammetry)—Koo Tsai Kee.
Hart Prize (Surveying)—J. V. Arthur.
Archibald P. Head Memorial Medal and Prize (Mechanical Engineering)—R. A. Holland.
Heimann Medal (German)—M. Jack.
Herschel Prize (Astronomy)—N. J. Elton.
Elsie Hitchcock Prize (English)—N. J. F. Jones.
John Oliver Hobbes Memorial Scholarship in Modern English Literature—K. Millicheap.
Holford Travelling Scholarship (Urban Planning)—Lesley Williams.
Hollier Scholarship in Hebrew—Paola Pallais.
R. B. Hounsfield Prize in Traffic Engineering—Tiraneh Tehranchian.
R. B. Hounsfield Prize in Town Planning and Civic Engineering—M. C. T. Ma.
R. B. Hounsfield Scholarship in Traffic Engineering—M. R. Tight.
Hotine Exhibition (Photogrammetry)—Koo Tsai Kee.
Huntingdon Research Centre Prize (Histology Part I—Medical Sciences)—Susan G. Griffith.
Joel Hurstfield Prize (History)—A. Middleton.
ICI Prize (Second Prize in Anatomy—Part I)—W. Wang Ee Jen.
Institution of Civil Engineers Prize—F. Baradaran-Seid.
Institution of Electrical Engineers Prize—P. V. Brennan.
Institution of Mechanical Engineers Prize—M. R. L. Selbie.
Jackson Lewis Scholarships—Deborah Christie, I. Thorpe.
Sir Hilary Jenkinson Scholarships in Archive Studies—C. M. Harrington, I. R. Humphreys, D. A. Leitch.
Rhianon Jones Memorial Prize (English)—J. D. Butcher.
Ker Memorial Prize (English)—A. J. Tootill.
Kestelman Prize (Mathematics)—C. Turner.
Kitson Prizes (Chemical and Biochemical Engineering)—S. P. Edwards, A. E. P. Thomas.
Dr R. Kohn Prize (Physiology Part I—Medical Sciences)—P. W. Millard.
Library and Information Studies Exhibitions—Carol Howarth.
Sir John Macalister Medal (Library and Information Studies)—M. W. Chambers.
Betty Malcolm Scholarship (Fine Art)—Arlene Munro.
H. S. W. Massey Research Prize (Astronomy)—D. A. Bone.
Mead Scholarships in Geography—Judy Darley, S. Tremblett.
Medical Sciences Bursaries Fund Scholarships—Simone J-M Kohll.
Medical Sickness Society Elective Period Award (Clinical Sciences)—N. Supple, S. Marriage.
Merck Sharp and Dohme Ltd Prize (Biochemistry Part I—Medical Sciences)—N. D. Jones.
Merck Sharp and Dohme Ltd Prize (Genetics Part II—Medical Sciences)—S. G. Janmohamed.
Sir William Meyer Prize (Geography)—C. M. Strutt.

Sir William Meyer Prize (History)—C. Slapper.
Sir William Meyer Essay Prize (Geography)—R. M. Hall.
Sir William Meyer Travelling Studentships (History)—Emma M. Coppen, D. M. Dean, S. Ghosh, R. L. Grant, S. J. Lewis, C. M. Lowndes, Gillian Verity Meacher, R. Q. Millican, C. Montgomery, G. E. Morgan, J. H. Morris, A. P. Peterson, M. J. Swinley, A. G. Walker, H. G. B. Wilken, Jennifer Power.
Cecily de Monchaux Memorial Prize (Psychology)—S. M. Lloyd.
Rosa Morison Postgraduate Scholarship in Arts—Demelza Spargo.
Morley Medal and Prize (Modern English Literature)—Charlotte M. Lennox Boyd.
Morris Prize (Geology)—C. M. G. Rendell.
Melvill Nettleship Prize for Figure Composition—R. W. Hale.
Ronald Nyholm Prize (Chemistry)—J. M. Doherty.
Catherine Maude Pearce Scholarship for Senior Women Students—Winifred M. Jordan.
Perren Studentships (Astronomy)—R. G. Parlour, C. Beynon, Davina Innes.
Platt Prizes (Greek)—M. Quinn, Sarah Wilkinson.
Harry Poole Prize (Chemistry)—A. R. H. Goodwin.
Prankerd-Jones Fund Elective Period Awards (Clinical Sciences)—S. Wong, M. Peakman, L. Kroll, E. Scott, K. Sennett, P. Short, V. Herzmark, M. Malden, C. Buswell, D. Franks, P. Joseph, S. Yentis, G. Zeppetella, E. J. Bridger, P. Bliss, P. Chia, S. Dimond, S. Ewings, J. Foster, F. Finlay, J. Higham, A. Ishaq, C. King, A. F. Lue, A. J. Nicholls, S. Novak, L. Painter, J. Piggott, M. Rashid, R. Rashid, C. Saunders, S. Sinclair, M. Tomson.
Prankerd-Jones Memorial Prize in Fine Art—Judith Green.
Prankerd-Jones Memorial Prize in Immunology—D. Hill.
Prankerd-Jones Memorial Prize—Project—Part II Examination—J. M. Hebden.
Ramsay Memorial Medal (Chemistry)—M. L. Wolf.
Mary Rischgitz Pize (Fine Art)—Alexandra Schwarzer.
Graham Robertson Travelling Scholarships (Fine Art)—N. Swift, Liz Magill.
Robert Ross Scholarship in Fine Art—M. Terry.
Rosenheim Elective Period Awards (Clinical Sciences)—I. Wallace, D. Holdright, K. Jolowicz, P. Rich, F. King, C. Donne, E. Evanson, G. Lane, M. Mukherjee, P. Colyer, C. Evans, C. Oliver, P. Yudelman, J. Andrade, C. Gilder, R. Mattu, A. Singh, P. Mathwaring, K. Grady, A. Halls, S. McCullough, D. Turbin, L. Archibald, I. Llewellyn, P. S. Bower, S. Williams, Anne Griffith, S. Rudolph, P. Set, A. Tournay, J. Tyebkhan, Marcelle A. P. Von Schoenberg, A. Webster, J. Dawkins, S. Moss, M. O'Donoughue, M. Ramsay, T. Rogers, E. Rosentolder, P. Sumarakone, A. Meud, R. Quinliven, D. Ralevic, D. J. Berry, A. Cowin, F. Baber, M. Conway, K. Lawrence, J. Moorman, J. Page, H. Saba, M. Zukerman.
L. M. Rothschild Scholarships in French—Tessa Kendall, M. Screech.
Slade Prizes (Fine Art)—Leonada Reynolds, Kirsty Smith.
Slade Scholarships (Fine Art)—M. Turner, Gillian Steer, Elizabeth H. J. Rendle-Short, Jane Garland.
Franz Sondheimer Bursary (Chemistry)—C. Schneider, Alka Khuranu, J. V. Bullen, B. Bettels.
Franz Sondheimer Prize (Chemistry)—D. R. Payne.
Stevenson Prize (Applied Mathematics)—Karen M. Reddington.
Steer Medal and Prize (Fine Art)—Bernadette Kerr.
John Stuart Mill Scholarship in Philosophy of Mind and logic—S. Evnine.
Sully Scholarship (Psychology)—Deborah Christie.
Sir Andrew Taylor Prize in Architecture—C. Cust.

Sir Andrew Taylor Prize in Fine Art—Amanda Rabey.
J. A. C. Thomas Scholarship (Laws)—Monica Carss-Frisk.
Henry Tonks Prize (Fine Art)—Amanda Watson.
Townsend Viking Society Prize (Scandinavian Studies)—P. Baker.
Troughton Scholarship—V. Spencer.
Tuffnell Scholarships (Chemistry)—J. M. Doherty, A. R. H. Goodwin.
A. J. V. Underwood Exhibition (Chemical and Biochemical Engineering)—S. N. Davies.
L. F. Vernon-Harcourt Prize (Civil Engineering)—D. Lo O. Kwan.
Ellen Watson Memorial Scholarship in Applied Mathematics—Shiu Tim Lam.
Dr Christopher Whiteside Awards (Clinical Sciences)—Jennifer M. Swann, N. J. Wainwright, D. T. Hindley, Anne Haigh, T. Gillow.
Dr D. T. Whittet Prize (Pharmacology Part II—Medical Sciences)—Anne Y. Warren.
Audrey Wykeham Prize (Fine Art)—Ruth E. Hawkins.
T. C. Yu. Elective Period Awards—J. Lolley, J. Reeves, M. A. Firman, C. King, P. Domizio, R. Nyholm, G. Toms, H. Chieng, R. Stanowski, Caroline R. Sanders, J. Henderson, C. Arnold, M. Jensen, P. Allen, A. W. Daniels, C. Davies, G. Martinez, A. Otter, D. P. Macleod, D. C. Paterson, J. Stephenson, J. Swann, J. Beckett, D. Cox, H. Dunkelman, L. Gardner, S. George, G. Harding, J. Higgins, D. Hindley, C. S. Jenner, C. Kinder, P. Lacoux, K. Le Ball, R. Lonsdale, E. J. Widdowson, C. M. Yerbury, S. Longhurst, C. McLelland, C. Fleming.

FACULTY MEDALS AND PRIZES

Arts. Rosa Morison Medal and Prize—P. J. Tickle.
Engineering: Goldsmid Medal and Prize—P. V. Brennan, D. Lo O. Kwan.
Environmental Studies: Medal and Prize—T. D. Plant.
Medical Scences: Medal and Prize—Maria A. K. Bitner-Glindzicz, S. B. Tawse.
Science: Medal and Prizes—A. J. Lawrence, K. A. Swann.

SESSIONAL PRIZES

Anthropology: Kaberry Prize—D. Arspakos. *Rosa Morison Prize*—W. P. Williams.
English: Campbell Clarke Scholarships—A. Tootill, A. Rattray. *Ifor Evans Prize*—Joanne Lodge. *West Scholarship*—R. A. Bradbury.
Fine Art: Coldstream Prize—K. Manwaring. *Monnington Prize*—Ann Gardner.
French: Rosa Morison Prizes—Philippa Hansen, Anne Gorman, Sara Greaves, Lucy Norman.
Geography: College Prize—D. R. Childs. *H. C. Darby Prize*—M. M. Wolf. *Maconochie Prize*—A. A Owen. *1903 Prize*—F. J. Webb. *W. R. Mead Prize*—R. N. P. Hadow, R. P. J. Nicholson.
German: Robertson Prize—E. W. Evans. *Willoughby Prize*—Sandra Lickorish.
Greek: Long Prize—P. Hicks. *Webster Prize*—M. Brady, Jane Stuart-Smith.
History: Alfred Cobban Prize—P. Finnemore. *Dolley Prize*—P. Hayle. *West Prize*—P. Drain. *Pollard Prize*—D. Morris.
History of Art: Gombrich Prize—Fatma S. Whitby. *Whittkower Prize*—Barbara Laszczak.
Italian: Sir Anthony Panizzi Prize—Sophie Wilson.
Latin: Key Prize—Isobel Koprowski. *Sessional Prize*—Claudia Gintersdorfer.
Philosophy: Dawes Hicks Scholarships—W. J. Mander, O. Animashawun.

Phonetics and Linguistics: Harold E. Palmer Prize—Sarah Lodge. *Alexander Melville Bell Prize*—D. Appleton. *Goldmand-Eisher Prize*—Barbara Taylor. *D. B. Fry Prize*—Kim Brown.

Political Economy: Hume-Lloyd Scholarships—I. A. Daniels, A. J. Brown, L. M. R. Phillips, G. *C. Allen Prize*—M. S. Tickle. *Sessional Prize*—H. P. Berg.

Scandinavian Studies: Crabtree Prize—M. Humphries. *Rosa Morison Prize*—A. Brenan.

Spanish and Latin American Studies: Alcala Galiano Prize—Rachel Waters. *A. A. Parker Prize*—P. Gahan.

Architecture: Bartlett Prizes—R. Constable, N. Scales, H. M. Whittaker.

Anatomy and Embryology: J. Z. Young Prize—Sandra Semmens. *N. A. Barnicot Prize*—Sharron Collis.

Biochemistry: Jack Drummond Prize—Alison Lloyd. *Plimmer Prize*—Katherine Wright.

Botany and Microbiology: Darwin Prize—A. A. F. Gann. *Huxley Prize in Biology*—Pauline Hernandez.

Chemistry: C. K. Ingold Prizes—Deborah C, McGachan, A. G. Neville, Susan M. Trevellick.

Computer Sciences: Sessional Prizes—I. A. Tidder, C Nicolaou, S. R. Deal.

Genetics and Biometry: Genetics and Biometry Prize—C. Cole.

Geology: Hollingworth Prize—A. Pontual Machado, A. J. Williams. *Chubb Prize*—A. J. Hawkins.

Mathematics: Filon Prize—P. M. Wright. *Hill Prize*—S. J. Parkins. *Jeffery Prize*—S. J. Mills.

Pharmacology: H. O. Schild Prize—Clare Deacon.

Physics and Astronomy: Huggins Prize—S. L. Edmunds.

Physiology: Sanderson Prize—M. Strickland, M. Collins.

Psychology: Burt Prize—A. Hollingworth, F. Rees. *McDougall Prize*—F. Clarke. *Spearman Prize*—M. Lisboa. *G. C. Drew Prize*—V. J. Brown, J. Fabricius.

Statistical Science: Egon Pearson Prize—A. T. Leach. *Karl Pearson Prize*—K. A. M. Barnes.

Zoology: Zoology Prizes—T. Curds, S. Harrison.

Chemical and Biochemical Engineering: Goldsmid Prizes—Angela J. Brazier, L. M. Little, T. J. Wilson.

Civil and Municipal Engineering: Goldsmid Prizes—B. J. Johnson, Nariman Khoury, E. T-W Sit.

Electronic and Electrical Engineering: Goldsmid Prizes—R. H. Ashworth, A. N. Sloper, T. E. Vallely.

Mechanical Engineering: Goldsmid Prizes—Chee Wee Kiong, N. C. Howard, A. R. Greig.

Medical Courses—Part I Examination: Drummond Prize in Biochemistry—W. Wang Ee Jen. *Glaxo Prize for Best Aggregate Performance in Part I*—Julia Dark. *ICI Prize in Physiology*—Julia Dark. *Smith Kline and French Laboratories Limited Prize in Anatomy*—G. A. Farfan.

Medical Courses—Part II Examination: Cluff Prize in Physiology—Anne Y. Warren. *Cuxson Gerrard Prize in Pharmacology*—Justine M. H. Carr-Brion. *Drummond Prize in Biochemistry*—W. Wang Ee Jen. *Elga Prize in General Pathology*—Justine M. H. Carr-Brion, M. R. D. Wheeler. *Suckling Prize in Neurosciences*—M. R D. Wheeler. *Wellcome Prize in Human Biology*—Jacqueline S. Porter. *Wyeth Prize for Best Aggregate Performance in Part II*—Justine M. H. Carr-Brion, Anne Y. Warren. *Project Prizes*—Margaret R. Oliver, Linda A. Watson.

Second Examination in Dental Surgery: Anatomy Prize—M. R. Blum, R. Pathmanathan. *Biochemistry Prize*—Alexia D. Smith. *Physiology Prize*—Sarah L. Blake, Joanne Walton. *Best Aggregate Performance Prize*—P. Blake.

Dutch: Christina Dockx (2nd year). *Electronic and Electrical Engineering:* Mehdi Vaez Iravani (1st year). *Jethro Bithell Prize:* Rudiger Gorner. *Gerstenberg Prize in Economics:* Paul Jonathan Tickle. *Robert Priebsch Memorial Prize:* Roger Clark Scuphum.

APPENDIX VI

BENEFACTIONS, DONATIONS, RESEARCH GRANTS AND CONTRACTS

The College Committee makes grateful acknowledgement of the following:

ANGLO-AUSTRALIAN OBSERVATORY

(1) £344,667 for the Department of Physics and Astronomy for the construction of Conde Echellé Spectrograph.

(2) £6,942 for the Department of Physics and Astronomy for a second design study for Conde Echellé Spectrograph.

(3) £3,471 for the Department of Physics and Astronomy for a design study for Echellé Spectrograph.

ARTHRITIS AND RHEUMATISM COUNCIL

(1) £680 for the Bartlett School of Architecture and Planning for a student project grant for Mr Keen.

(2) £10,713 for the Department of Experimental Pathology for the study of antiprotease (antitrypain) secretion from human macrophages.

(3) £36,443 for the Department of Medicine for the study of myopathic effector cells in inflammatory muscle disease.

ASSOCIATION FOR INTERNATIONAL CANCER RESEARCH

(1) £15,455 for the Department of Biochemical Pathology for the development of Micro-autoscintography.

(2) £3,500 for the Department of Biochemical Pathology for the identification of viral oncogenic sequences in carcinoma of the cervix.

(3) £2,000 for the Department of Biochemical Pathology for studies in virus replication.

(4) £650 for the Department of Botany and Microbiology for a study of mutagenesis.

BOEHRINGER-INGELHEIN LIMITED

£9,975, and £2,867 for the Department of Geriatric Medicine for a second study of Tranxene.

BRITISH HEART FOUNDATION

(1) £53,933 for the Department of Physiology for the study of the regulation of the resting ionized calcium concentration in mammalian cardiac muscle.

(2) £5,142 for the Department of Physiology for the study of calcium binding and force production in skinned cardiac muscle.

BRITISH LIBRARY

£13,700 and £13,200 for the Department of Computer Science for studies for the Electronic Document.

BRITISH PETROLEUM COMPANY LIMITED

(1) £4,000 for the Department of Chemical and Biochemical Engineering for the study of liquid and solid fuels.

(2) £69,925 for the Department of Geology for the study of the mechanical properties of ice.

(3) £6,000 for the Department of Mechanical Engineering for the Underwater Trials Centre for Non-Destructive Testing.

CANADIAN HIGH COMMISSION

£1,093 for the Department of Library, Archive and Information Studies for the compilation of a list of theses on Canadian topics submitted to British Universities and Polytechnics.

CANCER RESEARCH CAMPAIGN

(1) £19,274 for the Department of Anatomy and Embryology for the study of muscle differentiation: the role of eicosanoids in the transition of the proliferating myoblast to the non-dividing differentiating myotabe.

(2) £60,721 for the Department of Biochemistry for the biosynthesis and onduction of cytochrome P450.

(3) £3,151 for the Department of Biochemistry for the study of the pre-replicative phase of *saccharomyces cerevisae* using gene cloning techniques.

(4) £14,034 for the Department of Genetics and Biometry for the study of oncogene activation in familial polyposis coli.

(5) £22,829 for the Department of Haematology for treatment trials in lung cancer.

(6) £250 for the Department of Physiology for a screening of brain tissue study.

CENTRAL ELECTRICITY GENERATING BOARD

£22,860 for the Department of Geography for lake sediment cone analysis as a measure of acidification.

CENTRAL RESEARCH FUND

£1,653 for the Department of Anatomy and Embryology for the study of phosphate chemistry.

COMMISSION OF THE EUROPEAN COMMUNITIES

(1) £1,925 for the Bartlett School of Architecture and Planning for a joint programme of study with overseas universities etc., in architecture.

(2) £1,650 for the Surgical Unit for a joint programme of study with the University of Athens.

COMPUTER AND SYSTEMS ENGINEERING PLC

£8,000 for the Department of Computer Science for computer network management.

DECCA ELECTRONICS LIMITED

(1) £23,500 for the Department of Electronic and Electrical Engineering for a Wide Band E.S.M. Circular Array study.

(2) £2,500 for the Department of Electronic and Electrical Engineering for a Wide Band E.S.M. Circular Array study: a preliminary study.

DEPARTMENT OF THE ENVIRONMENT

(1) £292,074 for the Department of Civil and Municipal Engineering for the Urban Safety Area Project: the moitoring of Project II.

(2) £56,498 for the Department of Civil and Municipal Engineering for the study of pedal cycles in Greater London.

(3) £40,137 for the Department of Civil and Municipal Engineering for the studyof road accidents in residential areas.

(4) £6,141 for the Department of Civil and Municipal Engineering for an analysis of the interactions between work travel and home and job in Greater Manchester.

(5) £5,985 for the Department of Civil and Municipal Engineering for the traffic signal junction program OSCADY — optimization routines.

DEPARTMENT OF HEALTH AND SOCIAL SECURITY

(1) £209,000 for the Department of Medical Physics for the construction of a system of predictive modelling of surgical procedures.

(2) £27,569 for the Department of Obstetrics and Gynaecology for the study of safe obstetric methods.

(3) £22,823 for the Department of Obstetrics and Gynaecology for a study of the prevention of Thalassamia among Asians in Britain.

(4) £102,000 for the Department of Statistical Science for the construction of disease modelling and information systems for clinicians (CORU).

(5) £6,800 for the Department of Surgery for the development of laser systems to fragment stones.

DEPARTMENT OF TRADE AND INDUSTRY

(1) £81,169 for the Department of Chemistry for the study of the critical properties and vapour pressures of organic compounds.

(2) £300,000 for the Department of Statistical Science for the development of an information technology micro-computer system for clinicians.

ECONOMIC AND SOCIAL RESEARCH COUNCIL

(1) £65 for the Department of Anthropology for the study of farming strategies and local patterns in land reform agriculture: a Mexican case.

(2) £1,800 for the Bartlett School of Architecture and Planning for a 'Rural Economy and Society' study group summer school.

(3) £4,720 for the Department of Geography to monitor grant applications to the Council over the past six years and to analyse trends in funding.

(4) £3,339 for the Department of History for the preparation of the definitive edition of the collected works of Jeremy Bentham.

FIGHT FOR SIGHT

£3,600 for the Department of Physiology for a study of the role of cyclic nucleotides in the biochemistry of the photoreceptors.

GENERAL ELECTRIC COMPANY

£5,000 for the Department of Electronic and Electrical Engineering for the study of fibre optics remote sensing.

GLAXO GROUP RESEARCH LIMITED

£21,350 and £15,464 for the Surgical Unit for research into anti-ulcer drugs.

GREATER LONDON COUNCIL

£6,750 for the Bartlett School of Architecture and Planning for a conference on the future of the GLC.

HOME OFFICE

£29,995 for the Department of Geography (Centre for Urban Studies Section) for the comparative study of general and special policies in race relations.

IMPERIAL CANCER RESEARCH FUND

(1) £166,090 for the Surgical Unit for the study of the photosensitisation of tumours using Phthalocyanines.

(2) £22,000 for the Department of Statistical Science for the construction of disease modelling and information systems for clinicians.

IMPERIAL CHEMICAL INDUSTRIES

£12,600 for the Department of Zoology and Comparative Anatomy for the development of suitable bio-assays for identifying products from the T-lymphocyte cell line K_2S/N.

INSTITUTE FOR BIOTECHNOLOGICAL STUDIES

£50,000 for the Department of Chemical and Biochemical Engineering for studies of the extended use of Biocatalysts.

INSTITUTE OF UROLOGY

£1,500 for the Surgical Unit for the study of peptides and renal failure.

KING EDWARD'S HOSPITAL FUND FOR LONDON

£30,545 for the Department of Anatomy and Embryology (History of Medicine) for the preparation of the history of King Edward's Hospital Fund for London.

L. H. ENGINEERING COMPANY LIMITED

£27,610 for the Department of Chemical and Biochemical Engineering for the establishment of a teaching company programme between University College London and L. H. Engineering Company Limited.

LEVERHULME TRUST

(1) £3,500 for the Department of Chemistry for the completion of research determining the energetics of ionization and fragmentation.

(2) £104,950 for the Department of History for research to complete for publication the comprehensive edition of the correspondence of Jeremy Bentham.

(3) £29,750 for the Department of History for part of a general study of land use and settlement in East Britanny from Roman times to the present day.

(4) £12,100 for the Department of Political Economy for a study of the impact of changing oil prices on developing countries.

LISTER INSTITUTE OF PREVENTIVE MEDICINE

(1) £92,869 for the Department of Botany and Microbiology for a Research Fellowship to research into the mechanism and control of taxis in bacteria.

(2) £104,450 for the Department of Physiology for a Research Fellowship to research into the molecular genetics of drug receptors.

LONDON TRANSPORT EXECUTIVE

£23,108 for the Department of Electronic and Electrical Engineering for the study of obstacle detection using image processing.

MARIE STOPES RESEARCH FUND

£489 for the Department of Physiology for the study of ovarian steroid hormones.

MAX PLANCK INSTITUT

DM6,000 for the Department of Biochemistry for a computer simulation project.

MEDICAL RESEARCH COUNCIL

(1) £63,570 for the Department of Anatomy and Embryology for a study of the influence of environmental factors in the growth and differentiation of enteric neurons *in vitro.*

(2) £55,732 for the Department of Anatomy and Embryology for immunocytochemical studies of the adult and developing visual cortex.

(3) £49,314 and £564 for the Department of Anatomy and Embryology for the study GABA as neurotransmitter in the vertebrate PNS: studies on enteric neurons *in vitro* and *in situ.*

(4) £29,450 for the Department of Anatomy and Embryology for the study of osteoblast-osteoclasis interactions and the control of osteoclasis.

(5) £48,430 for the Department of Anatomy and Embryology for a comparison of the rate of development of normal and diseased skeletal muscle.

(6) £30,976 for the Department of Anatomy and Embryology for the study of ATP as a cotransmitter in the sympathic innervation of smooth muscle.

(7) £22,161, £546 and £350 for the Department of Anatomy and Embryology for the analysis of sensory signals in the central nervous system.

(8) £13,607 for the Department of Anatomy and Embryology for the study of hypertrophy of the intramural neurons in the intestine of adult mammals.

(9) £87,134 for the Department of Biochemistry to study how eukaryotic messenger RNA nucleotide sequence may programme the differential initiation of translation.

(10) £45,930 for the Department of Biochemistry for the study of the senitivity of adipose tissue in diabetic humans and animal models to the action of regulators of lipolycis.

(11) £42,519 for the Department of Biophysics for the study of synaptic transfer in the rod retinal pathway.

(12) £14,470 for the Department of Biophysics for the study of the mechanisms of synaptic function.

(13) £9,239 for the Dental School for an investigation into the biological conteal mechanisms within dental plaque.

(14) £53,541 for the Department of Experimental Pathology for the study of the purification and mechanism of action of the rabbit neutrophil receptor for chemotactic formyl peptides.

(15) £3,116 for the Department of Experimental Pathology for the study of the role of phosphatidylinositol hydrolysis in the release of inflammatory mediators from neutrophils and mast cells.

(16) £156,750 for the Department of Haematology for the studies of the properties and function of the microbicidal oxidases electron transport chain of phagocytic cells.

(17) £15,145 for the Department of Mental Health for a comparison of family sessions with a relatives group in the treatment of schizophrenic patients.

(18) £16,030 for the Department of Obstetrics and Gynaecology for the study of the anatomical development and maturity of the fetal/neonatal lung and its adaptation to the extra-uterine environment.

(19) £4,140 for the Department of Obstetrics and Gynaecology for Globin chain synthesis studies.

(20) £6,310 for the Department of Paediatrics for the non-invasive investigation of cerebral energy metabolism using Phosphorus NMR spectroscopy.

(21) £328 for the Department of Paediatrics for the study of the prevention of brain damage in new born infants who require intensive care.

(22) £556,360 for the Department of Pharmacology for the study of the mechanisms of action of neurotransmitters, their analogues/antagonists in PNS and CNS synapses and in artificial bilayers.

(23) £111,140 for the Department of Pharmacology for the MRC receptor mechanisms research group.

(24) £71,985 for the Department of Pharmacology for the study of Apamin.

(25) £2,480 for the Department of Pharmacology for the analysis of neurotransmitter receptors and synaptic function in the vertebrate central nervous system.

(26) £1,000 for the Department of Pharmacology for the investigation of cholinergic synapses.

(27) £60,665, £330 and £257 for the Department of Phonetics and Linguistics for the study of electrical hearing and speech pattern presentation to the deaf.

(28) £20,605 for the Department of Phonetics and Linguistics for the study of acoustic stimulation.

(29) £30,190 for the Department of Physics and Astronomy for the study of automatic serial section reconstruction.

(30) £56,714 for the Department of Physiology for the study of phototransduction in vertebrate rods and cones.

(31) £4,344 and £341 for the Department of Physiology for the study of the neurophysiology of the Salamander retina.

(32) £533 for the Department of Physiology for experiments on the comparative physiology of muscle energetics and mechanics.

(33) £59,627 for the Department of Psychology for the study of the immediate recall, phonemic awareness and phonological disturbances of reading and mapping the relations.

(34) £36,182 for the Department of Psychology for the study of visual pattern acuity and interpolation.

(35) £53,586 for the Department of Zoology and Comparative Anatomy for the characterisation of Epstein Barr Virus.

(36) £45,900 for the Department of Zoology and Comparative Anatomy for the study of bulk production and molecular characterization of human B cell growth and differentiation factors.

(37) £975 for the Department of Zoology and Comparative Anatomy for the study of the significance of inherited variation in mice.

THE MIGRAINE TRUST

£3,960 for the Department of Physiology for the investigation of the relationship between spreading cortical depression and migraine.

MINISTRY OF AGRICULTURE, FISHERIES AND FOOD

£7,307 for the Department of Clinical Pharmacology for the study of the effects of low dosage exposure to enzyme inducing pesticides and food contaminants.

MINISTRY OF DEFENCE

(1) £14,255 for the Department of Chemistry for the study of the spectroscopy of explosives.

(2) £700 for the Department of Chemistry for the study of the resonance reman spectroscopy of explosives.

(3) £161,887 for the Department of Computer Science for the investigation of internetworking techniques.

(4) £17,100 for the Department of Computer Science for a research study into distributed databases.

(5) £12,000 for the Department of Computer Science for the provision of computer services.

(6) £38,904 for the Department of Electronic and Electrical Engineering for study of the applicability of the mode conversion technique to fatigue crack sizing in Tee Butt Welds.

(7) £37,370 for the Department of Electronic and Electrical Engineering for the study of active phased array techniques.

(8) £29,660 for the Department of Electronic and Electrical Engineering for a bistatic radar system based on television transmissions.

(9) £23,302 for the Department of Electronic and Electrical Engineering for bistatic radar research.

(10) £20,439 for the Department of Electronic and Electrical Engineering for the study of ultrasonic waves in powder metallurgy disc alloys.

(11) £13,965 and £11,450 for the Department of Electronic and Electrical Engineering for the investigation of eddy current NDE.

(12) £11,065 for the Department of Electronic and Electrical Engineering for the study of lens fed conformal antenna arrays.

(13) £158 for the Department of Electronic and Electrical Engineering for the development of analysis techniques for SAW devices.

(14) £6,580 for the Department of Psychology (Ergonomics Unit) for the study of the use of colour on plan displays.

(15) £6,000 for the Department of Mechanical Engineering for the development of simple mathematical models of bird impact and containment.

(16) £61,805 for the Department of Phonetics and Linguistics for the study of the phonetic effects of word boundary in automatic speech recognition.

MULTIPLE SCLEROSIS SOCIETY

£55,416 for the Department of Zoology and Comparative Anatomy for the study of the use of monoclonal antigalactocerebroside antibodies *in vivo* to study the possible role of galactocerebroside in myelination.

MUSCULAR DYSTROPHY GROUP OF GREAT BRITAIN

(1) £12,800 for the Department of Anatomy and Embryology for the study of the *in vitro* proliferation and cytodifferentiation of normal and dystrophic satellite cells.

(2) £9,493 for the Department of Anatomy and Embryology for the study of the mechanism for cotnrolling the survival of developing motoneurones.

(3) £99,722 for the Department of Medicine for the treatment of muscular dystrophy.

(4) £900 for the Department of Zoology and Comparative Anatomy for the study of human muscle cells grown in tissue culture.

NATIONAL FUND FOR CHILDBIRTH RESEARCH

£17,989 for the Department of Medical Microbiology for the antenatal diagnosis of congenital rubella by identification of rubella RNA sequences.

NATIONAL FUND FOR RESEARCH INTO CRIPPLING DISEASES

(1) £44,625 for the Department of Anatomy and Embryology for the study of the function of cell surface molecules and extra-cellular matrix components in the maintenance of normal neuro-glia relationships in the peripheral nervous system.

(2) £49,227 for the Department of Anatomy and Embryology for the study of the autonomic nerves and neurotransmission in nerves of the urinary bladder and urethra of patients with spinal cord injury.

(3) £42,824 for the Department of Botany and microbiology for the study of chromosome segregation.

(4) £38,066 for the Department of Paediatrics for the study of factors affecting the recovery of brain energy metabolism followin peri-natal hypoxia and asphyxia.

(5) £6,591 for the Department of Medical Microbiology for research work on reoviruses and parvoviruses (transferred from King's College London).

NATIONAL KIDNEY RESEARCH FUND

(1) £2,000 for the Department of Medicine for the study of dietary fibre in uraemia.

(2) £68,836 for the Department of Paediatrics for a grant in support of kidney research.

NATURAL ENVIRONMENT RESEARCH COUNCIL

£16,000 for the Department of Photogrammetry and Surveying for the geometric correction of airborne MSS data.

NORTH ATLANTIC TREATY ORGANISATION

BF 220,000 for the Department of Chemistry for the studyof transport properties of ionic oxides and fluorides.

NORTH EAST THAMES REGIONAL HEALTH AUTHORITY

(1) £15,213 for the Department of Surgery for a study for the detection of early colon cancer.

(2) £9,174 for the Department of Surgery for the construction of a faecal bile acid profile to detect early colorectal cancer.

NUFFIELD FOUNDATION

(1) £1,850 for the Department of Anatomy and Embryology for the study of the effects of different patterns of activity on developing muscle fibre.

(2) £1,357 for the Department of Anatomy and Embryology for the study of the interstitial cells of Cajal: are they pacemaker cells?

(3) £950 for the Department of Anatomy and Embryology for the study of the ultrastructure of immunohistochemistry of taste buds.

(4) £2,471 for the Department of Anthropology for the conservation, cataloguing and research of the Napier Collection.

(5) £2,420 for the Department of Experimental Pathology for the study of the biosynthesis and secretion of alpha-1-antitrypsin.

(6) £3,270 for the Department of Genetics and Biometry for the study of geneflow, gene interaction and speciation.

(7) £15,724 for the Department of Haematology for the capacity of phagocytic cells to engulf and digest particles from patients with rheumatic diseases.

(8) £1,910 for the Department of History for the study of steerage conditions and American Law, 1750-1914.

(9) £622 for the Department of History for an East Brittany study: the Oust/Villame watershed.

(10) £11,968 and £1,476 for the Department of Laws for 'Planning by Agreement: a study of the implementation of Part II of the Wildlife and Countryside Act 1981'.

(11) £1,000 for the Department of Laws for a conference on US/UK administrative law.

(12) £1,400 for the Department of Mathematics for research on moving fluid interfaces.

(13) £2,465 for the Department of Physiology for a patch damp study of phototransduction in vertebrate rods.

(14) £1,310 for the Department of Physiology for 'Does an osmotic force drive secretory exocytosis?'

(15) £750 for the Department of Physiology for 'How is the force which moves chromosones regulated?'

(16) £578 for the Department of Physiology for oxygen and blood flow measurement in relation to spreading cortical depression and migraine.

(17) £814 for the Department of Spanish and Latin American Studies for the study of Josi Marti in Cuban history and politics.

OCEANEERING INTERNATIONAL SERVICES LIMITED

£6,000 for the Department of Mechanical Engineering for the Underwater Trials Centre for non-destructive testing.

OVERSEAS DEVELOPMENT ADMINISTRATION

£2,000 for the Department of Histopathology for histopathological services for the developing countries.

OXFORD RESEARCH INTERNATIONAL CORPORATION

$68,494 for the Department of Geriatric Medicine for a multiclinic study to determine the safety and efficacy of Buflomedil in patients diagnosed as having senile dementia of the Alzheimer type.

QUEST FOR A TEST FOR CANCER

£13,000 for the Department of Genetics and Biometry to identify and test an early warning marker associated with cancer.

ROCHE PRODUCTS LIMITED

£12,000 for the Department of Psychology for the study of the enhancement of benzodiazepine actions by B-adrenoceptor-blockers in rodents and marmosets.

ROCKEFELLER FOUNDATION

$25,000 shared equally between the Departments of Genetics and Biometry, and Botany and Microbiology for the study of the mitochondrial role in the inhibition of spermatogenesis by Gossypol.

ROWLAND FOUNDATION

$62,000 for the Department of Anatomy and Embryology for visual cortical research in monkeys.

ROWNTREE MEMORIAL TRUST

£15,044 and £1,200 for the Bartlett School of Architecture and Planning for the study of empty dwellings in the inner city.

ROYAL SOCIETY

(1) £66,500 for the Department of Geology for a 1983 University Research Fellowship.

(2) £10,000 for the Department of Geology for a study in Halmerha.

(3) £68,500 for the Department of Physics and Astronomy for a Royal Society Fellowship.

SCIENCE AND ENGINEERING RESEARCH COUNCIL

(1) £19,586 for the Bartlett School of Architecture and Planning for an evaluation of the determinants of training provision in the construction industry.

(2) £15,240 for the Bartlett School of Architecture and Planning for instrumentation for luminance pattern measurement and its use with regard to visual assessment of quality.

(3) £37,022 for the Department of Biochemistry for the study of leader sequences involved in enzyme excretion in *Streptomyces.*

(4) £12,450 for the Department of Biochemsitry for the study of the structure of R Prime Plasmids with enhanced expression of amidase genes.

(5) £6,030 for the Department of Biochemistry for the development of mathematical flux models for the analysis of *in vivo* 13C NMR studies.

(6) £4,169 for the Department of Biochemistry for the study of the cloning ARGF gene of *Pseudomonas aeruginosa.*

(7) £283,714 for the Department of Chemical and Biochemical Engineering for a biochemical engineering study to improve protein processing.

(8) £51,000 for the Department of Chemical and Biochemical Engineering for a general treatment of the suspension, mixing, segregation and transport of particle by fluids.

(9) £48,631 for the Department of Chemical and Biochemical Engineering for the study of fermentation and protein product recovery.

(10) £36,590 for the Department of Chemical and Biochemcial Engineering (Biotechnology Centre) for the study of microbial halogenation.

(11) £21,434 for the Department of Chemical and Biochemical Engineering for a teaching company programme between UCL and L. H. Engineering.

(12) £15,410 for the Department of Chemical and Biochemcial Enginering for a study of chemical engineering biotechnology and British Industry.

(13) £24,700 for the Department of Chemistry for the characterisation of enzymes from tissue cultures of *Pinus* species.

(14) £2,565 for the Department of Chemistry for computer modelling of inorganic crystals.

(15) £1,360 for the Department of Chemistry for powder and single crystal neutron diffraction studies at NBS Washington.

(16) £1,277 for the Department of Chemistry for time of flight neutron diffraction studies at IPNS Argonne.

(17) £120 for the Department of Chemistry for EXAFS studies of disorder in crystalline solids.

(18) £392,000 and £1,000 for the Department of Civil and Municipal Engineering for London Marine Technology Centre projects 1983-85.

(19) £75,490 for the Department of Civil and Municipal Engineering for computer assisted design of the geometry and layout of roundabouts.

(20) £41,546 for the Department of Civil and Municipal Engineering for fibre optics in water filtration studies.

(21) £30,471 for the Department of Civil and Municipal Engineering for improvements to a technique to estimate trip matrices from traffic counts.

(22) £24,272 for the Department of Civil and Municipal Engineering fordetermining which requirements of public transport users in cities could be met by Information Technology.

(23) £21,410 for the Department of Civil and Municipal Engineering for the investigation for the accessibility to employment in conurbations with applications to London, 1971-1981.

(24) £17,740 for the Department of Civil and Municipal Engineering for the investigation of instability: its prediction, prevention and control.

(25) £553 for the department of Civil and Municipal Engineering for the study of continuous deep bed filtration.

(26) £147,540 for the Department of Computer Science for the study of integrated OTS satellite/ring experimental computer network.

(27) £83,617 for the Department of Computer Science for the study of message services and directory developments.

(28) £46,264 for the Department of Computer Science for the preparation of computer architectures for functional programming.

(29) £40,664 for the Department of Computer Science for the study of protocol requirements.

(30) £26,115 for the Department of Computer Science for theoretical and experimental studies of linked local area and wide area network.

(31) £323,357 for the Department of Electronic and Electrical Engineering for a design and test centre for micro-electronic circuits.

(32) £159,620 for the Department of Electronic and Electrical Engineering for the UCL contribution to JOERS consortium — Lithium Niobate technology and devices.

(33) £64,902 for the Department of Electronic and Electrical Engineering for the UCL contribution to JOERS proposal for research on alternative inorganic materials.

(34) £38,550 for the Department of Electronic and Electrical Engineering for finite element analysis of semiconductor integrated optical guides and abrupt discontinuities.

(35) £15,653 for the Department of Electronic and Electrical Engineering for the study of interactive computing systems.

(36) £8,000 for the Department of Electronic and Electrical Engineering for flat plate antennas for satellite reception.

(37) £2,620 for the Department of Electronic and Electrical Engineering for a sabbatical study of self-focussing antenna arrays.

(38) £1,710 for the Department of Electronic and Electrical Engineering for acoustic microscopy applied to *in vivo* tissue measurements.

(39) £18,500 for the Department of Geology for X-ray analysis of sequential pitaxy in system Sapphire Au:ZnO for optimisation of piezo-electric performance.

(40) £42,259 for the Department of Genetics and Biometry for the study of speciation and the 'shifting balance' in structured populations: the application of new mathematical techniques.

(41) £20,660 for the Department of Mathematics for the study of fluid interfaces moving on a solid surface.

(42) £20,660 for the Department of Mathematics for the study of the stability of swirling flaws.

(43) £1,680 for the Department of Mathematics for the study of the geometry of Banach spaces and functional analysis.

(44) £777,000 for the Department of Mechanical Engineering for London Marine Technology Centre projects, 1983-85.

(45) £21,002 for the Department of Medical Physics for the study of the visualisation of oxygenation of the brain and muscles of newborn infants by near infra-red transillumination.

(46) £703,200 for the Department of Physics and Astronomy for geophysical and astronomical research in space.

(47) £205,295 for the Department of Physics and Astronomy for Experimental High Energy Physics.

(48) £161,187 for the Department of Physics and Astronomy for the enhancement of HEP local computing facility.

(49) £124,578 for the Department of physics and Astronomy for atmospheric research 1984.

(50) £89,737 for the Department of Physics and Astronomy for an advanced fellowship.

(51) £77,213 for the Department of Physics and Astronomy for an advanced fellowship.

(52) £41,716 for the Department of Physics and Astronomy for an advanced fellowship.

(53) £38,626 for the Department of Physics and Astronomy for a cryogenic CCD camera for common use.

(54) £37,795 for the Department of Physics and Astronomy for studies of positronium formation and development work for the production of intense positron teams.

(55) £35,763 for the Department of Physics and Astronomy for support for the Starlink Mode.

(56) £32,950 for the Department of Physics and Astronomy for the investigation of the chemical composition of peculiar and normal A and B stars.

(57) £27,547 for the Department of Physics and Astronomy for developments for infra-red astronomy from space.

(58) £20,211 for the Department of Physics and Astronomy for an IRAS Guest Observer Programme.

(59) £15,186 for the department of Physics and Astronomy for an infra-red astronomy programme at University College London.

(60) £12,951 for the Department of Physics and Astronomy for the development of Starlink application software.

(61) £6,500 for the Department of Physics and Astronomy for the expansion of the CLIP 4 Laboratory.

(62) £5,755 for the Department of Physics and Astronomy for experimental high energy physics 1984-85.

(63) £4,344 and £3,499 for the Department of Physics and Astronomy for observations at IRCF.

(64) £2,761 and £2,142 for the Department of Physics and Astronomy for observations at AAT.

(63) £4,344 and £3,499 for the Department of Physics and Astronomy for observations at IRCF.

(64) £2,761 and £2,142 for the Department of Physics and Astronomy for observations at AAT.

(65) £2,115 for the Department of Physics and Astronomy for observations at Kattamia.

(66) £1,934, £150 and £138 for the Department of Physics and Astronomy for observations at SAAO.

(67) £1,768 for the Department of Physics and Astronomy for studies of hot stars, stellar winds and stellar spectra at all wavelengths from X-ray to radio.

(68) £1,713 for the Department of Physics and Astronomy for observations at Mt Palomar.

(69) £1,613 for the Department of Physics and Astronomy for observations at Lick Observatory.

(70) £1,178 for the Department of Physics and Astronomy for observations at NRAO.

(71) £285 for the Department of Physics and Astronomy for the tycho Project team meeting.

(72) £100 for the Department of Physics and Astronomy for provision of computing facilities at Rutherford Appleton Laboratories.

(73) The provision of a Senior Fellowship in the Department of Physics and Astronomy.

(74) £3,500 for the Department of Physiology for a feasibility study on how the force which moves chromosomes is generated and regulated.

(75) £24,515 for the Department of Statistical Science for the use of cross-validated forward selection for improved neutron and charged particle activation analysis.

(76) £6,360 for the Department of Statistical science for subjective probability assessment and prequential validation.

SIR JULES THORN CHARITABLE TRUST

£41,816 for the Department of Obstetrics and Gynaecology for the study of fetal lung and placental function.

SOCIAL SCIENCE RESEARCH COUNCIL

(1) £495 for the Department of Anthropology for a Mexican case study of farming strategies and local politics in land reform agriculture.

(2) £263 for the Department of Anthropology for a study of Christianity, custom and colonial change in the Solomon Islands.

(3) £1,760 for the Department of Laws for a conference on the methodological issues arising from the Phase I monitoring of labour legislation projects.

STANDARD TELECOMMUNICATIONS LABORATORIES

£10,500 for the Department of Electronic and Electrical Engineering for microstrip lenses for antenna arrays.

STERLING WINTHROP

£8,786 for the Department of Geriatric Medicine for a study of stanozolol/calcium in osteoporosis.

TOBACCO ADVISORY COUNCIL

£20,324 for the Department of Experimental Pathology for a study of α-antitrypsin deficiency.

UNITED KINGDOM ATOMIC ENERGY AUTHORITY

(1) £47,412 for the Department of Chemistry for the modelling of radioactive waste disposal.

(2) £104,867 for the Department of Computer Science for network communications with the USA.

(3) £1,500 for the Department of Electronic and Electrical Engineering for further investigation of pulsed eddy-current testing techniques.

(4) £25,198 for the Department of Physics and Astronomy for the study of the Columbus 900-1200 spectrometer.

UNITED STATES AIR FORCE

(1) $24,800 for the Department of Electronic and Electrical Engineering for high precision IF phase shifters.

(2) £26,217 for the Department of Physics and Astronomy for low energy plasma detectors.

(3) $17,600 for the Department of Physics and Astronomy for atmospheric structure variations.

UNITED STATES NAVY

£34,868 for the Department of Electronic and Electrical Engineering for high accuracy phase and gain control of active phased arrays.

UNITED STATES PUBLIC HEALTH SERVICE

(1) $27,767 for the Department of Chemistry for the study of the 3-dimensional structure of protein molecules.

(2) $31,940 for the Department of Physiology for the study of neuronal synchronisation in motor control.

(3) $36,662 for the Department of Zoology and Comparative Anatomy for the regulation of human T and B cell responses *in vitro*.

UNIVERSITY COLLEGE HOSPITAL SPECIAL TRUSTEES

£12,304 for the Surgical Unit for the study of bowel disease and colorectal carcinoma.

UNIVERSITY OF NEWCASTLE UPON TYNE/SERC

£14,575 for the Department of Civil and Municipal Engineering (Transport Studies Group) for the design of roads and traffic in urban areas — Phase 2.

VIVIAN L. SMITH FOUNDATION

$10,000 for the Department of Anatomy and Embryology (Cerebral Functions Group) for the study of spinal cord pain mechanisms.

SIGMA-TAU IFR s.p.a.

£32,972 for the Department of Medicine for studies of L-carnitine.

TOSARA PRODUCTS

£12,703 for the Department of Geriatric Medicine for tissue viability studies.

W. B. PHARMACEUTICALS

£9,322 for the Department of Geriatric Medicine for tissue viability studies.

WELLCOME TRUST

(1) £104,362 for the Department of Anatomy and Embryology for a Senior Lectureship (for research into stimulus/receptor relations in the spinal cord.

(2) £51,828 for the Department of Anatomy and Embryology for the study of the development of the hamster visual system.

(3) £36,720 for the Department of Anatomy and Embryology for the study of colour processing in macaque monkey visual cortex.

(4) £13,700 for the Department of Anatomy and Embryology for investigation into the localisation of neuropeptides in the rat brain.

(5) £12,951 for the Department of Anatomy and Embryology for funds for the Unit of the History of Medicine.

(6) £6,046 for the Department of Anatomy and Embryology for studies of the schizophrenic brain.

(7) £4,485 for the Department of Anatomy and Embryology for a Fellowship.

(8) £546 for the Department of Anatomy and Embryology for a study of glycogen phosphorylase activity in neurones.

(9) £539 for the Department of Anatomy and Embryology for a study of the distribution of small ions during early development of the mammalian embryo.

(10) £22,520 for the Department of Biochemistry for the study of the hormonal control of Ca^{2+} transport by liver mitochondria.

(11) £1,700 for the Department of Biophysics for the study of membrance channels opened by acetylcholine acting on the extra junctional membrane of muscle fibres.

(12) £4,740 for the Department of Experimental Pathology for the study of the control of calcium mobilisation in mast cells.

(13) £3,820 for the Department of Experimental Pathology for the translocation of newly synthesised secretory problems in cell free systems.

(14) £79,515 for the Department of Haematology for the study of factors in the interaction between phagocytes and bacteria that predispose to microbial infection.

(15) £1,000 for the Department of Haematology for the study of neutrophil function in relation to infection.

(16) £12,674 for the department of Physiology for studies of GABA and benzodiazepine receptors in mutant mouse spastic.

(17) £9,827 for the Department of Physiology for a study of cell cycle calcium transients.

(18) £3,185 for the Department of Physiology for a study of taste receptors.

(19) £625 for the Department of Physiology for the study of plasma problems in embryonic development.

(20) £546 for the department of Physiology for the study of uptake of plasma proteins by ventricular zone cells in the developing brain.

(21) £50,233 for the Surgical Unit for research into monoclonal antibodies in colorectal cancer.

(22) £6,053 for the Department of Zoology and Comparative Anatomy for the renewal of a Fellowship.

WELLS KRANT KRAMER LIMITED

£2,000 for the Department of Mechanical Engineering for the underwater trials Centre for non-destructive testing.

WESTLAND HELICOPTERS LIMITED

£5,500 for the Department of Electronic and Electrical Engineering for the study of optical fibre strain gauges.

WIGGINS TEAPE LIMITED

£26,435 for the Department of Civil and Municipal Engineering for the study of fibre/filler interactions in the machine paper wet-end.

WORLD HEALTH ORGANISATION

$5,000 for the Department of Obstetrics and Gynaecology for the study of hereditary diseases.

APPENDIX VII

COLLEGE ACCOUNTS 1983-84

The Balance Sheets and the Income and Expenditure Accounts for the year will be found on pages 216-17.

INCOME AND EXPENDITURE

EXPENDITURE for the year exceeded INCOME by £1,529,070. The net deficit carried forward on the Income and Expenditure Account was £3,433,667.

Income exceeded that for 1982-83 by £3,059,271 including grants from the Court of the University which increased by £1,068,446, fees which increased by £367,355 and grants for research which increased by £1,951,912.

Expenditure, including allocations to and from Reserves, was £3,826,530 more than in 1982-83. An additional £839,377 was spent on academic departments and services. Maintenance of premises increased by £473,644 net. An additional £151,418 net was spent on administration, and miscellaneous expenditure decreased by £410,179 net.

Income and expenditure under the main classifications in 1983-84 as compared with 1982-83 and 1978-79, are shown in the following table.

	1978-79		1982-83		1983-84	
	£	%	£	%	£	%
EXPENDITURE						
Salaries and Pensions of Teaching Staff	8,986,033	34.1	15,449,977	32.9	16,498,948	32.4
Departmental Expenses, including Library	5,260,263	20.0	9,986,866	21.2	9,777,272	19.2
Research Grants	5,037,185	19.1	10,638,582	22.6	12,590,494	24.8
Maintenance of Premises	4,281,582	16.3	7,046,086	15.0	7,519,730	14.8
Administration	1,709,680	6.5	2,778,154	5.9	2,929,572	5.8
Other	1,060,901	4.0	1,140,144	2.4	1,550,323	3.0
	£26,335,644	100.0	£47,039,809	100.0	£50,866,339	100.0
INCOME						
Endowments	215,000	0.8	276,517	0.6	332,854	0.7
Grants	15,653,660	60.7	27,023,560	58.4	28,092,006	56.9
Donations	531,990	2.1	2,005,106	4.3	1,677,951	3.4
Fees	3,822,655	14.8	5,592,796	12.1	5,960,151	12.1
Grants for Research	5,037,185	19.5	10,638,582	23.0	12,590,494	25.5
Research Training Support Grant	62,084	0.2	69,660	0.1	89,020	0.2
Other	493,233	1.9	671,777	1.5	594,793	1.2
	£25,815,807	100.0	£46,277,998	100.0	£49,337,269	100.0

EXTRA-BUDGETARY ACTIVITIES

The College administers the finances of many research projects supported from outside sources. 828 were being pursued actively at 31 July 1984. Income and expenditure increased from £10,638,582 in 1982-83 to £12,590,494 in 1983-84.

UNIVERSITY COLLEGE LONDON
BALANCE SHEET AS AT 31 JULY 1984

1983 £		1984 £	£
	FIXED ASSETS		
20,930,615	Land and Buildings		20,981,055
	INVESTMENTS at lower of cost and		
6,066,467	Market Value		7,272,819
26,997,082			28,253,874
	CURRENT ASSETS		
246,510	Stores	242,596	
4,285,212	Expenditure Recoverable from Grants	5,664,646	
2,402,758	Debtors and Amounts Paid in Advance	1,837,925	
5,520,017	Short-Term Cash Deposits	5,010,920	
391,317	Cash at Bank and in Hand	145,562	
12,845,814		12,901,649	
	Less: CURRENT LIABILITIES		
(4,036,756)	Creditors and Accruals	(5,242,766)	
8,809,058	NET CURRENT ASSETS		7,658,883
35,806,140	NET ASSETS		35,912,757
3,378,165	TRUST FUNDS		3,771,129
£39,184,305			£39,683,886
	REPRESENTED BY:		
20,842,584	Capital Reserve		20,900,915
(1,225,496)	Adverse Balance on Other Reserves		(2,562,634)
6,429,815	Provisions		7,380,803
801,446	Balance carried forward on Revenue Grants		539,145
8,957,791	Earmarked Funds		9,654,528
35,806,140			35,912,757
3,378,165	TRUST FUNDS		3,771,129
£39,184,305			£39,683,886

INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31 JULY 1984

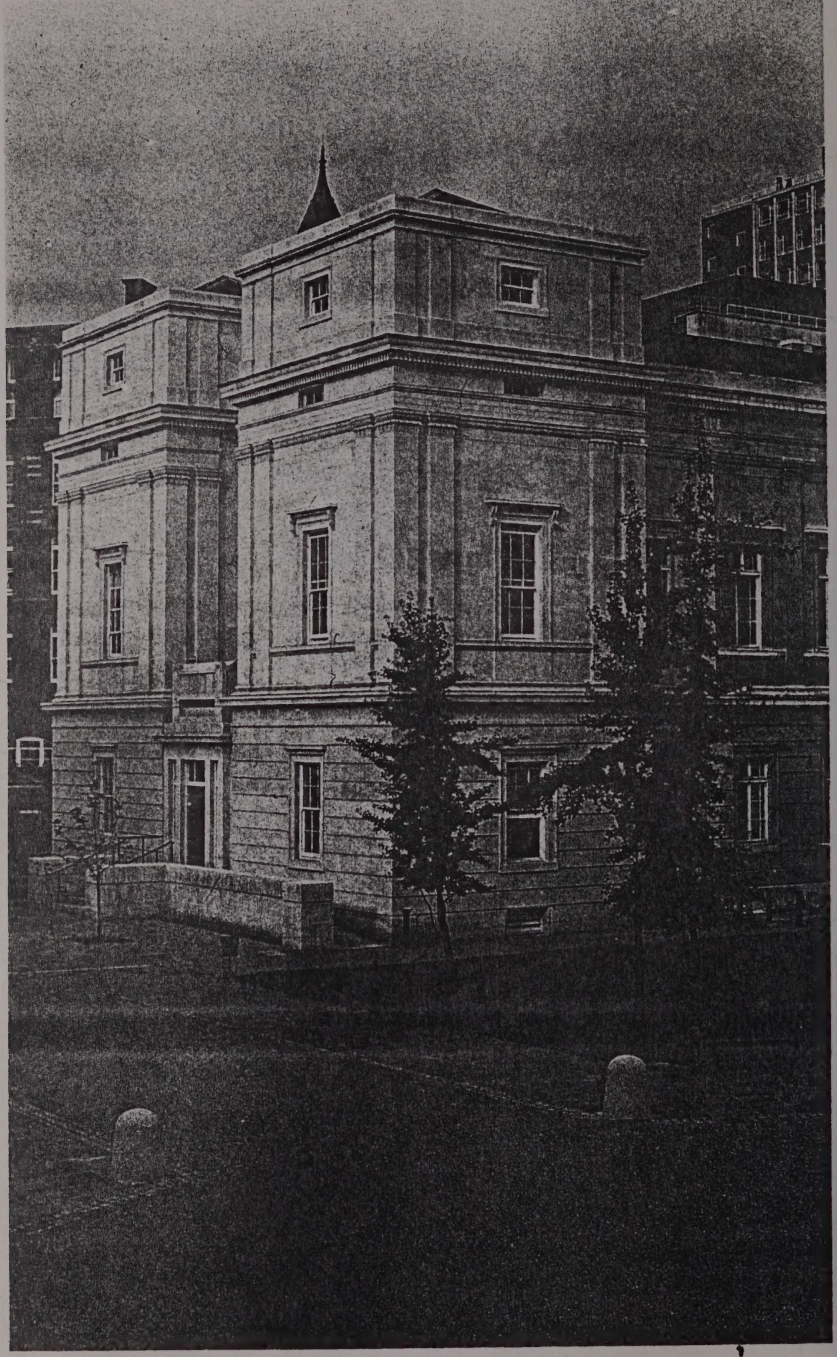
1982-83 £		1983-84 £	£
	INCOME		
27,023,560	Grants from University Court		28,092,006
5,592,796	Fees		5,960,151
276,517	Endowments		332,854
2,005,106	Donations		1,677,951
10,638,582	Grants for Research		12,590,494
69,660	Research Council Training Support Grants		89,020
353,523	Contributions for Service Rendered		415,308
38,466	College Properties — Rents Receivable		40,858
5,113	Appropriation from Special Funds		31,137
187,913	Interest Receivable		—
36,762	Miscellaneous		107,490
282,739	Provision for Salary Awards at 1 August 1983		37,194
1,206,672	Allocation from Reserves at 1 August 1983		861,973
£47,767,409			50,236,436
	EXPENDITURE		
2,509,024	Administration	2,899,485	
33,483,498	Academic Departments	35,833,888	
1,458,747	Academic Services	1,486,974	
6,958,384	Maintenance of Premises	7,624,774	
410,837	General Education Expenditure	386,417	
687,633	Student Faculities and Amenities	679,650	
1,749,749	Miscellaneous	1,456,217	
272,181	Capital Expenditure met from Income	564,267	
37,194	Provision for Salary Awards	309,837	
961,973	Allocation to Reserves at 31 July 1984	523,997	
£48,529,220			51,765,506
(761,811)	EXCESS OF EXPENDITURE FOR THE YEAR		(1,529,070)
(1,142,786)	ACCUMULATED DEFICIT AT 1 AUGUST 1983		(1,904,597)
£(1,904,597)			£(3,433,667)

INCOME AND EXPENDITURE ACCOUNT
FOR THE YEAR ENDED 31 JULY 1984
UNIVERSITY COLLEGE LONDON
BALANCE SHEET AS AT 31 JULY 1984

	1982-83 £	1983-84 £
INCOME		
Grants from University Court	27,023,560	28,022,000
Fees	5,593,296	5,960,151
Endowments	276,517	332,854
Donations	2,005,106	1,677,951
Grants for Research	10,038,282	12,580,494
Research Council Training Support		
Grants	3,883,880	3,909,020
Contributions for Service Rendered	374,522	413,308
College Properties — Rents Receivable	38,466	40,858
Appropriation from Special Funds	5,117	31,137
Interest Receivable	187,913	—
Miscellaneous	36,762	107,390
Provision for Salary Awards at 1 August 1983	282,739	2,302,788
Allocation from Reserves at 1 August 1983	1,206,072	4,470,047
	£47,761,409	£50,236,436
EXPENDITURE		
Administration	£2,809,024	(4,036,256)
Academic Departments	34,483,498	8,806,850
Academic Services	7,238,247	35,833,888
Maintenance of Premises	6,958,384	3,378,165
General Education Expenditure	410,827	15,806,140
Student Facilities and Amenities	1,249,240	6,39,144,505
Miscellaneous	272,181	380,417
Capital Expenditure met from Income	2,240,044	679,050
Provision for Salary Awards	20,342,534	1,450,317
Allocation to Reserves at 31 July 1984	(1,225,466)	209,837
	£47,761,409	£50,236,436

	1982-83 £	1983-84 £
EXCESS OF EXPENDITURE FOR THE YEAR	(561,311)	(1,320,070)
ACCUMULATED DEFICIT AT 1 AUGUST 1983	(14,429,786)	(14,994,597)
	£14,994,597	£16,314,667

	1983 £	1984 £
FIXED ASSETS		
Land and Buildings	5,960,151	5,960,151
	332,854	332,854
INVESTMENTS at lower of cost and Market Value	1,677,951	1,677,951
	12,580,494	12,580,494
CURRENT ASSETS		
Stores	380,020	380,020
Expenditure Recoverable from Grants	413,308	413,308
Debtors and Accounts Receivable	40,858	40,858
Short-Term Cash Deposits	31,137	31,137
Cash at Bank and in Hand	—	—
	2,302,788	2,302,788
Less **CURRENT LIABILITIES**		
Creditors and Accruals	4,470,047	4,470,047
	2,302,788	2,302,788
CURRENT ASSETS	35,833,888	35,833,888
	3,378,165	3,378,165
TRUST FUNDS	15,806,140	15,806,140
	6,39,144,505	6,39,144,505
REPRESENTED BY		
Capital Reserve	380,417	380,417
Revenue Balance carried forward on Revenue Account	679,050	679,050
	1,450,317	1,450,317
Grants	209,837	209,837
Earmarked Funds	20,342,534	20,342,534
	(1,225,466)	(1,225,466)
	21,765,306	21,765,306
	801,446	801,446
	1,257,787	1,257,787
	(1,320,070)	(1,320,070)
	15,806,140	15,806,140
	(14,994,597)	(16,314,667)
	£14,994,597	£16,314,667



A view of the north extension of the Gower Street entrance.